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A mixed methods process evaluation of the Promoting Resilience in Nurses (PRiN) randomised controlled trial

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Declaration

This thesis is submitted to the Australian Catholic University in fulfilment of the requirement for the degree of Doctor of Philosophy.

This thesis contains no material that has been extracted in whole or in part from a thesis that I have submitted towards the award of any other degree or diploma in any other tertiary institution. No other person's work has been used without due acknowledgment in the main text of the thesis. All research procedures reported in the thesis received the approval of the relevant Ethics/Safety Committees (where required).

Minh Viet Bui

Statement of Appreciation

This PhD was one of the greatest challenges in my life, and I would not have been able to complete the journey without the support of those around me.

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Contents

List of Figures and Tables

Chapter 1

Chapter 2

Chapter 3

Chapter 8

Chapter 9

Glossary of Terms

Term	Definition
Control group	Mental health nurses in the trial who did not receive the PRiN program.
Convergent mixed methods	A research approach that combines qualitative and quantitative methods by simultaneously collecting and analysing both types of data, then integrating the findings to generate a comprehensive understanding of the research problem.
Coping self-efficacy	Person's perceived ability to cope effectively with life challenges.
Distal outcomes	Outcomes indirectly affected by the PRiN program (e.g., turnover intention).
Emotional intelligence behaviours	Capacity to recognise and manage self and others' emotional responses.
Implementation science	Scientific study of strategies and methods to improve the systematic uptake of research evidence and evidence-based practices.
Integration	Intentional mixing of qualitative and quantitative findings to generate a more comprehensive understanding or new insights into the research problem.
Mental health consumers	Individuals experiencing mental health challenges who are currently receiving, or have previously received, care and support from mental health services.

Mental health nurses	Registered nurses with a recognised mental health nursing specialist qualification in Australia. In this thesis, the term is used to include registered nurses with and without specialist qualifications, and enrolled nurses who work in mental health settings.
Meta-inferences	Overall conclusions or explanations generated from the integration of qualitative and quantitative findings using higher-level reasoning and analysis to surpass the sum of each.
Normalisation Process Theory	Middle-range, sociology Action Theory of implementation focusing on individual and collective works (instead of attitudes or beliefs) to implement, embed, and integrate a practice or intervention in healthcare settings.
Posttraumatic growth	Positive psychological changes following traumatic experiences.
Posttraumatic stress disorder	Mental health condition that occurs in response to traumatic experiences. Characterised by intrusive memories (e.g., flashback and nightmare); avoidance of triggers (such as places, people, or activities that reminds the individual of the trauma); and disturbing, intense feelings (e.g., fear and anger) and thoughts related to the experience.
Process evaluation	Studies that run in parallel with, or follow, intervention trials to explore trial processes and underlying mechanisms that may help explain the trial results and how the intervention could be translated from research into practice.
Program group	Mental health nurses who participated in the PRiN program.

Proximal outcomes	Outcomes directly targeted by the PRiN program (e.g., higher coping-self-efficacy, resilience, wellbeing).
Psychological distress	Non-specific distress focusing on depression and anxiety.
Resilience	Dynamic process of positive adaptation and recovery of wellbeing following stress and adversity.
Secondary posttraumatic stress	The emotional distress experienced by staff when hearing about trauma experiences of others (i.e. secondary exposure to trauma)
Stakeholders	Those involved in the development and delivery of the PRiN program or in program implementation. Includes nurses and managers from the health service, organisations that funded the PRiN trial, the PRiN program developers, and the research team.
Turnover intention	Person's intention to leave current organisation and seek new job.
Wellbeing	Hedonic (or emotional) wellbeing, and eudaimonic (i.e., psychological and social) wellbeing.
Workplace belonging	Workers' feelings of being accepted and valued by the organisation they work for.

List of Abbreviations

Abbreviation	Definition
ACMHN	Australian College of Mental Health Nurses
MHNs	Mental health nurses
MRC	Medical Research Council
NMBA	Nursing and Midwifery Board of Australia
NPT	Normalisation Process Theory
NWMH	NorthWestern Mental Health
PAR	Promoting Adult Resilience
PRiN	Promoting Resilience in Nurses
PRO	Promoting Resilience Officers
PTG	Posttraumatic growth
PTSD	Posttraumatic stress disorder

Abstract

Background

Mental health nursing work can involve substantial stressors including occupational violence, heavy workloads and caring for consumers with trauma and mental distress. These stressors may negatively impact nurses' wellbeing and practice and affect workforce retention. Psychological resilience is the dynamic process of positive adaptation and recovery of wellbeing following stress and adversity. Of importance, resilience can be developed and strengthened through targeted interventions. However, few resilience interventions have been reported in mental health nursing. Further, there are no prior parallel process evaluations of resilience interventions reported in the mental health nursing literature.

To address this gap, this thesis comprises a mixed methods process evaluation conducted alongside a partially clustered randomised controlled trial of the Promoting Resilience in Nurses (PRiN) program with mental health nurses (MHNs) in a large Australian public mental health service during the COVID-19 pandemic. The PRiN program is an evidence-based manualised program delivered by trained facilitators in the workplace, with aims to promote nurses' resilience, mental health, and wellbeing.

Aim and Objectives

The overall aims of this thesis (with publication) were to 1) identify factors that may help explain variation in participant outcomes (between the intervention and control arms) in the randomised controlled trial of the PRiN program, and 2) evaluate the PRiN program implementation.

Specific **objectives** were to:

1. Describe mental health nurses' and managers' perspectives on, and satisfaction with, the PRiN program.
2. Identify barriers and facilitators to implementation of the PRiN program.
3. Identify the extent to which the PRiN program was delivered as intended.
4. Explore and describe mental health nurses' experiences of the PRiN program, and how they applied the knowledge and skills learnt in the program to their personal life and practice.
5. Explore the experience and impacts of the COVID-19 pandemic on the resilience of nurses in mental health settings.
6. Explore factors in implementation of the PRiN program that may help explain variation in trial outcomes between the intervention and control groups.

Methods

A process evaluation methodology using a convergent mixed methods approach to data collection and analysis was employed. Data collection included program participant satisfaction surveys; follow-up semi-structured interviews with selected PRiN program participants; unit/team manager surveys on barriers and facilitators to staff participation in the program, and a program fidelity survey. Quantitative data were analysed descriptively, and qualitative data were subjected to thematic analysis. To address the first thesis aim, findings from each dataset were integrated with trial outcomes using joint display to generate meta-inferences. To address the second thesis aim, process evaluation findings were mapped to the Normalisation Process Theory (NPT) to deepen understanding of barriers and facilitators that influenced program implementation.

Findings

The process evaluation produced several new findings. The PRiN program was successfully implemented in the health service with strong fidelity (95% full delivery). Nurses (n = 60) reported high satisfaction (mean = 4.5/5) with the program, and nurses and managers (n = 17) found PRiN valuable for nurses and supported its wider implementation. In the context of COVID-19, program nurses reported significant negative impacts on their wellbeing and practice but were able to develop and maintain resilience by drawing on their professional commitment and knowledge and skills gained from the PRiN program. Eight meta-inferences were generated from integration of trial outcomes and process evaluation findings. They indicated that positive changes to program nurses' mental health, wellbeing, resilience and practice outcomes in the trial related to the program providing nurses with cognitive and emotional self-regulatory and stress management skills, new coping strategies, and interpersonal skills that helped them cope successfully with work and life challenges.

Conclusion

This is the first parallel process evaluation of the PRiN program. The findings indicated the program was effective in strengthening MHNs' wellbeing and resilience due to the knowledge and skills they developed. Recommendations include healthcare organisations routinely providing MHNs with resources and support for their wellbeing, including effective resilience interventions such as the PRiN program. Individual nurses are encouraged to utilise personal resources (e.g., coping strategies) and external support (e.g., peer support) to maintain their wellbeing and practice. The implementation of the PRiN program across settings and over time requires ongoing top-down support from leadership as well as bottom-up support from local leaders and champions (e.g., managers and senior nurses). PRiN can be situated within existing professional development structures to address the associated

resources and costs and offered as a continuing professional development activity to encourage nurses to participate.

Chapter 1: Introduction and Background

1.1. Chapter Introduction

This chapter provides the background to the problem addressed by this thesis and the significance of this research. Mental health nursing work, the concept of resilience, and how resilience interventions may be used to build nurses' resilience to address the negative impacts of workplace challenges, are described. The thesis aims and objectives, process evaluation design, and the researcher's positioning are outlined. The Promoting Resilience in Nurses (PRiN) program intervention and trial is described. The chapter concludes with an overview of the thesis structure.

1.2. Positioning of the Researcher

I am both an insider and outsider in this research and bring with me the assumptions that come with both positions. I am an insider as I am a mental health nurse and share many of the attributes and experiences of the participants in this research. Prior to commencing my PhD, I had worked as a new graduate psychiatric-mental health nurse (i.e., having just finished university and started working as a registered nurse) for two years between 2018 and 2020. During this period, I was traumatised by the experience of working in a highly acute inpatient environment during one of my clinical rotations. I witnessed colleagues being assaulted, personally experienced racial discrimination from consumers, and endured bullying from a colleague. Additionally, the nursing team I worked in was divided due to interpersonal conflicts and disagreement with management. The frequent lack of organisational resources (such as adequate security presence) further jeopardised staff safety. These cumulative experiences led me to transition from clinical work to research. I then came across the opportunity to be part of this large research project investigating the implementation of the PRiN resilience intervention for mental health nurses. I applied for this

PhD opportunity because it strongly resonated with my interests in resilience and positive psychology, particularly in the context of my prior work in mental health nursing. During my candidature I also worked as Research Assistant on the associated randomised controlled trial of the PRiN program.

As a researcher who is not currently practising clinically, I now find myself also in the position of an 'outsider'. However, despite my transition from clinical practice to research roles, I remain deeply connected with mental health nursing in many ways. I attend mental health nursing conferences every year and maintain regular contact with colleagues and friends who are mental health nurses. Further, my partner works as a mental health nurse working in an inpatient mental health service. Through my friends, former colleagues, and partner, and my work researching in this topic, I am an 'outsider' who is afforded the rare opportunity to vicariously observe the challenges mental health nurses face in their daily practice and the impacts of workplace stress and the COVID-19 pandemic on their wellbeing and clinical practice. Driven by these insights, I want to contribute to the implementation of interventions that enhance nurses' wellbeing and resilience, which will benefit not only the mental health care system in Australia, but also individual nurses working in the system. This thesis, and the challenging journey it represents, reflects my dedication to supporting the health and wellbeing of mental health nurses who are not just my colleagues, but friends and family.

1.3. Thesis Aims and Objectives

This thesis comprises the mixed methods process evaluation of a resilience intervention for MHNs implemented and trialled at NorthWestern Mental Health (Victoria, Australia). The trial and the process evaluation were conducted at the same time. Both have been completed. The trial results have been published (Foster, Shochet, et al., 2024) (see

Appendix 16). The **overall aims** were to i) identify factors that may help explain variation in participant outcomes (i.e., between the intervention and control arms) in the randomised controlled trial of the Promoting Resilience in Nurses (PRiN) program, and ii) evaluate PRiN program implementation.

To address the thesis aims, the **specific objectives** were to:

1. Describe mental health nurses' and managers' perspectives on, and satisfaction with, the PRiN program.
2. Identify barriers and facilitators to implementation of the PRiN program.
3. Identify the extent to which the PRiN program was delivered as intended.
4. Explore and describe mental health nurses' experiences of the PRiN program, and how they applied the knowledge and skills learnt in the program to their personal life and practice.
5. Explore the experience and impacts of the COVID-19 pandemic on the resilience of nurses in mental health settings.
6. Explore factors in implementation of the PRiN program that may help explain variation in trial outcomes between the intervention and control groups.

1.4. Thesis Rationale and Significance

Nurses work in many different mental health settings (e.g., inpatient units, crisis teams, community outreach, forensic centres) and have a broad scope of practice that centres on providing consumer-focused, recovery-oriented, and evidence-based care to people with mental distress and mental health concerns (Australian College of Mental Health Nurses Inc, 2013). Mental health nursing work is recognised as challenging as it entails frequent exposure to workplace stressors that may impact nurses' wellbeing and nursing practice (Foster et al., 2020). Building, strengthening, and maintaining MHNs' resilience in the workplace can be an

effective strategy to mitigate the negative impacts of workplace stress on nurses' wellbeing and practice. However, there is limited international evidence on resilience interventions in mental health nursing (Bui et al., 2023b; Foster et al., 2019), with only one pilot randomised controlled trial in the United Kingdom (Henshall et al., 2023) and one pilot study on a resilience intervention tailored specifically for mental health nurses (Foster, Shochet, Wurfl, et al., 2018). Additionally, prior to this thesis, there has been no published process evaluation that evaluated the implementation of a resilience intervention for mental health nurses.

The significance of this thesis therefore relates to both the scarcity of resilience intervention research in mental health nursing and the need for conducting process evaluations of randomised controlled trials to identify key factors that may support the effective implementation of interventions in real-world settings (Skivington et al., 2021). Findings from this process evaluation have national and international significance as they offer valuable insights into how nurses and managers in a health service perceived a resilience intervention (i.e., the PRiN program), how nurses applied strategies and knowledge from the program to maintain their resilience against stress at work and in their personal life, and the factors that contributed to positive changes in nurses' PRiN trial outcomes (i.e., the variation in outcomes between the intervention and control nurses). Findings also provide insights into factors that may influence the implementation of the PRiN program at health services and contribute to informing and improving post-trial wide scale implementation and adaptation of the program to other healthcare settings to benefit more nurses. This is important for the sustainability of the mental health nursing profession, and for individual MHNs who often prioritise mental health consumer care over their own wellbeing in their day-to-day work. The findings are of relevance to the wider mental health nursing workforce, healthcare organisations, and policy makers, in respect to addressing staff shortages and workforce attrition within mental health nursing.

1.5. Mental Health Nursing

1.5.1 Mental Health Care Settings

In the Australian context, mental health care settings include inpatient, community, and ambulatory care settings. Inpatient settings encompass psychiatric-mental health units or wards providing specialised mental health care (e.g., for the treatment of schizophrenia) within a public or private hospital. Community settings include outreach services to provide care for consumers and carers in the community, and residential mental health services for extended care and rehabilitation. Ambulatory (or non-admitted) care settings include community-based crisis assessment and treatment, hospital emergency departments, or hospital-based consultation-liaison services. These services focus on brief assessment, admission, and intervention (Australian Institute of Health and Welfare, 2019). Some nurses specialising in forensic mental health care may provide care for consumers and patients in forensic settings such as police custody centres and prisons (Barr et al., 2019). There are also mental health services in non-psychiatric and non-clinical settings, such as primary health care (i.e., general practice) (Olasoji et al., 2020) or schools and educational institutes (State of Victoria, 2021).

1.5.2 Mental Health Nurses

In Australia, mental health nurses (MHNs) are defined by the peak professional body, the Australian College of Mental Health Nurses (ACMHN), as registered nurses who have a recognised mental health nursing specialist qualification (Australian College of Mental Health Nurses Inc, 2010). Mental health nursing, however, is not endorsed as a specialty area by the Nursing and Midwifery Board of Australia (NMBA) and does not have a separate register (Foster & Hurley, 2024). Registered nurses without a specialist qualification may work in mental health (i.e. nurses working in mental health), but are not specialist MHNs (Australian College of Mental Health Nurses Inc, 2010). Enrolled nurses also work in this

specialty field. Therefore, total numbers of specialist mental health nurses in Australia are difficult to ascertain. An estimated 25,000 nurses reportedly work mainly in mental health (Australian Institute of Health and Welfare, 2023).

For the purposes of this thesis and for ease of reading, the term MHNs will include registered nurses with and without specialist qualifications, and enrolled nurses who work in mental health settings to provide care and support for people with mental health conditions and their family. In Australia, registered nurses must complete a Bachelor or a Master of Nursing pre-registration degree, and enrolled nurses require a Diploma of Nursing (Australian Government Department of Health and Aged Care, 2024). Registered nurses' scope of practice includes patient assessment and care plan development, medication education and administration, specialised care delivery, and participation in professional development and nursing leadership (Australian Government Department of Health and Aged Care, 2024). In contrast, enrolled nurses provide nursing care (e.g., assistance with activities of daily living or patient monitoring) under the supervision of registered nurses (Australian Government Department of Health and Aged Care, 2024).

1.5.3 Mental Health Nursing Work

The International Council of Nurses (2024) define mental health nursing work as providing care for individuals experiencing or at risk of mental health disorders, substance use issues, and behavioural problems, to promote their biological, psychological and social wellbeing. In their daily practice, MHNs provide direct care (e.g., mental health and physical health assessments, and medication administration) and indirect care (e.g., coordinating care and discharge planning), perform service-related activities (such as auditing, paperwork, clinical supervision or mentoring) (Abt et al., 2022), and deliver preventative health promotion activities (e.g., providing education on relapse prevention) (Olasoji et al., 2020).

Most importantly, mental health nursing work is relational, and building a therapeutic relationship (or therapeutic alliance) with mental health consumers is the foundation and cornerstone of mental health nursing practice (International Council of Nurses, 2022). While relationship-building and maintenance are valuable to varying degrees in all nursing specialties, they are considered the primary focus of the work in mental health nursing (Hartley et al., 2020). The therapeutic relationship is underpinned by nurses' therapeutic use of self, which requires the nurse to consciously draw on their inherent (e.g., personality) and acquired (e.g., interpersonal skills) knowledge and expertise to connect with a consumer to understand their inner world and experiences and to assist their recovery (Delaney et al., 2017). The therapeutic use of self is therefore influenced by several factors including self-awareness and empathy (Foster, Marks, et al., 2021), MHNs' attitude to the therapeutic relationship (e.g., being open and available), and their capacity to be attentive to consumers' emotions and needs (Lim et al., 2019), by actively listen and respond to consumers (Tolosa-Merlos et al., 2023).

Mental health nurses face inherent demands of their work related to the interpersonal relationship and their therapeutic use of self. This includes bearing witness to consumers' distress and trauma, dealing with consumer and carer-related conflict and violence (Cranage & Foster, 2022) and suicide and self-harm behaviours (Sarafis et al., 2016), and managing deterioration of consumers' mental and/or physical health (Simpson et al., 2016). Further challenges include conflict with work colleagues, bullying, and working with unmotivated staff (Cranage & Foster, 2022; Foster, Roche, et al., 2021). Organisational demands include heavy workloads (Yao et al., 2021), inadequate staffing (Joubert & Bhagwan, 2018), and poor skill mix (Baker et al., 2019). The research in this thesis was conducted during the COVID-19 pandemic, which, in addition to the everyday challenges nurses already face, added further stress for this workforce (Foye et al., 2021; Johnson et al., 2021) by

exacerbating existing mental health crises in the community and creating unprecedented demands (e.g., mental health consumers presenting with higher acuity and risk of aggression) (Abbas et al., 2021). The International Council of Nurses (2024) identified that the pandemic amplified long-standing problems (such as heavy workloads and burnout) and negatively impacted MHNs' recruitment and retention.

1.5.4 Impacts of Workplace Stress

Workplace stress is known to have detrimental effects on nurses' physical and mental health and wellbeing. Physical health problems include injuries due to physical violence (Alhassan & Poku, 2018), poor sleep quality (Fia et al., 2022; Hsieh et al., 2021), headaches and loss of concentration (Fia et al., 2022), and low energy levels (Kelly et al., 2016). Inadequate organisational support and ongoing staff conflict, combined with exposure to workplace aggression, may also create a hyperarousal state that precipitates psychological problems such as anxiety, insomnia, or posttraumatic stress reactions (Lee et al., 2015). Long-term psychological impacts of workplace stress include depression (Hasan et al., 2018) and anxiety (Delgado et al., 2021). Further, exposure to traumatic events, including workplace violence and caring for consumers with suicidal or self-harm behaviours puts MHNs at higher risk of developing posttraumatic stress disorder (PTSD) (Itzhaki et al., 2015) (Soravia et al., 2021) and secondary traumatic stress (i.e., the emotional distress of staff when hearing about consumers' trauma experience) (Mangoulia et al., 2015; Öztürk & Alagöz, 2024).

Organisational and staff-related stressors (such as staff shortages and high workload) can also affect nurses' therapeutic work and care delivery (Foster et al., 2020; López-López et al., 2019), and are associated with lower quality of care and poorer patient outcomes (Aiken et al., 2017). For instance, when a work unit is short-staffed and MHNs experience

heavy workloads, they are less likely to provide good care (Han et al., 2015). Internationally and nationally, workplace stress has had a substantial impact on the sustainability and retention of the mental health nursing workforce (Adams et al., 2021; Harrison et al., 2017). Additionally, high nurse turnover can be costly for health organisations, as it is associated with the costs of orienting and training new nurses, and productivity loss (Bae, 2022; Halter et al., 2017).

For these reasons, organisations are responsible for trying to reduce or mitigate workplace stressors where possible, and provide resources and support to maintain and improve nurses' wellbeing, support workforce retention and sustainability, and address the impacts of workplace stress on MHNs' health and wellbeing (Foster, Cuzzillo, et al. (2018). Resilience-building interventions can be an effective prevention approach and provide nurses with further knowledge and skills to manage workplace stress and strengthen their resilience (Kunzler et al., 2022). Prior evidence indicates resilience interventions may be protective against the psychological impacts of workplace stress (Foster, Cuzzillo, et al., 2018) and can help to reduce workforce attrition rates (Zheng et al., 2017).

1.6. Resilience

Resilience is variously defined in the literature, with a range of conceptualisations of the term including it being considered a trait, an ability, an outcome, and/or a process (Denckla et al., 2020; Vella & Pai, 2019). The varying use and conceptualisations of resilience across fields of research and contexts has given rise to several forms of resilience named in the literature, e.g., personal resilience (Jefferies et al., 2022), psychological resilience (Hegney et al., 2015), family resilience (Gayatri & Irawaty, 2022; Walsh, 2016a), business/organisational resilience (Aldianto et al., 2021; Bell, 2019), collective resilience (Elcheroth & Drury, 2020), national resilience (Dahan et al., 2022; Kimhi & Eshel, 2019),

social-ecological resilience (Ungar & Theron, 2020; Zhang et al., 2022), and workplace resilience (Hartmann et al., 2020; McLarnon & Rothstein, 2013). As the conceptualisation of a concept typically directs the measurements, analyses, and development of practical interventions (Den Hartigh & Hill, 2022), this variation and lack of consistency has implications for resilience research.

1.6.1 Evolution of Resilience Theory and Research

Resilience research over more than five decades has undergone several 'waves' of enquiry (Vella & Pai, 2019). The concept of resilience first arose in the 1970s when researchers observed children who grew up in adverse situations including poverty, parental mental illness, and childhood abuse or neglect, and noticed that some had unexpected good outcomes (e.g., prosperity in adulthood) while others had poorer outcomes (e.g., failure to thrive) (Reich et al., 2010; Vella & Pai, 2019). Researchers hypothesised that thriving individuals displayed positive adaptation to adversity because they possessed some protective *resilience personality traits* and *characteristics*, such as a positive affect or an easy temperament during childhood (Hu et al., 2015). Thus, resilience research during this time primarily focused on identifying the individual traits and factors associated with resilience following exposure to adversity (Vella & Pai, 2019). Between the 1980s and 1990s, research moved beyond this to examine the dynamic process by which these traits interacted with other social and environmental factors to contribute to resilient outcomes and successful adaptation to adversity (e.g., how having healthy attachment style and supportive relationships helped protect against stressful events) (Davies & Cummings, 2015). In the next wave of inquiry between the 1990s and 2000s, researchers sought to develop theory-driven resilience-building interventions, particularly for individuals at high risk of adverse outcomes (Masten et al., 2023). These interventions were designed to promote positive adaptation to adversity by building and enhancing personal (e.g., education), social (e.g., having supportive

relationships), environmental (e.g. a safe neighbourhood), and cultural (e.g. religious traditions) protective factors and processes (Masten et al., 2023).

Contemporary resilience research (2000s to current) aims to gain a better understanding of resilience across multiple social-ecological systems, i.e., from individual, to family, community, workplace, to society (Vella & Pai, 2019). To address this, researchers have employed advanced technologies (e.g., functional neuroimaging to study neural circuitry of emotional regulation) and methodologies (e.g., new statistical analysis techniques) to incorporate genetics research (Kaye-Kauderer et al., 2021; Masten et al., 2023), neurobiological adaptation (Kaye-Kauderer et al., 2021), and neural development (Feldman, 2020) with psychological and social science research (Ungar, 2021). Contemporary resilience theory conceptualises resilience as a dynamic process of positive adaptation to adversity, involving interaction between personal and external resources, where a person draws on *personal* skills and strategies (e.g., the ability to regulate emotions, and perseverance) as well as *external* support and resources (e.g., having family support, and adequate financial resources) to cope, adapt to, and recover from adversity and restore wellbeing (McLarnon & Rothstein, 2013; Vella & Pai, 2019). This thesis uses this contemporary conceptualisation of resilience, and the conceptualisation of resilience in the workplace.

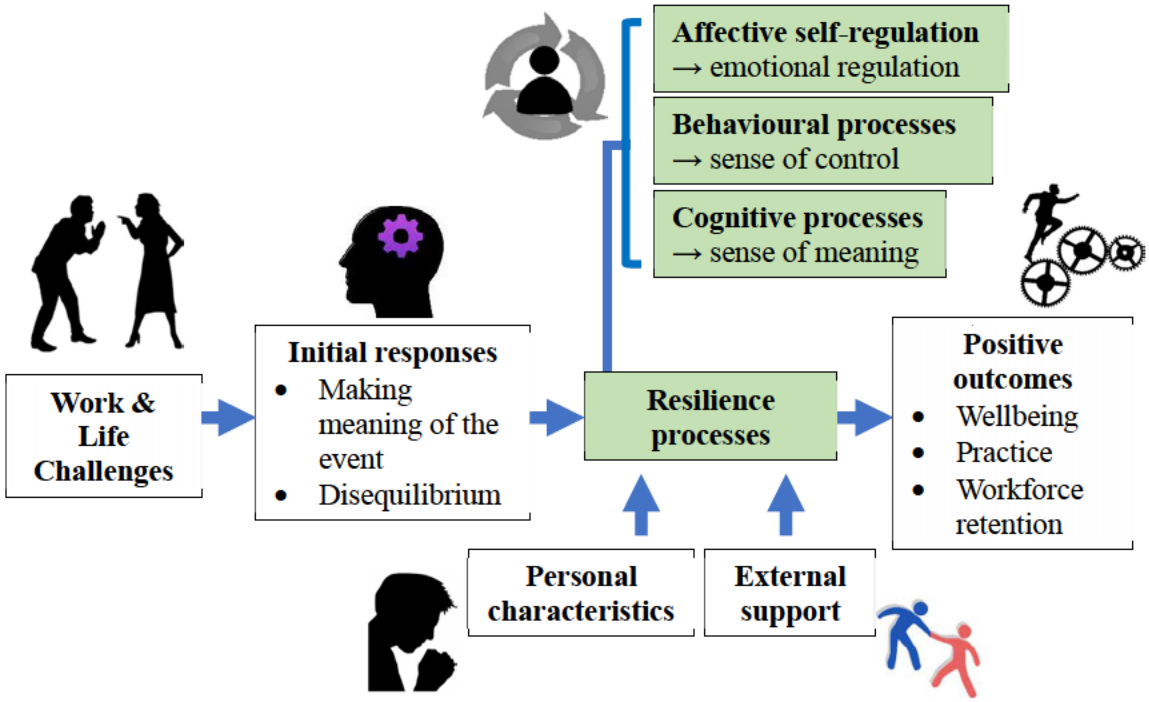
1.6.2 Resilience in the Workplace

This thesis comprises the process evaluation of a resilience intervention implemented in the workplace. An average adult spends roughly a third of their day at work (Giattino et al., 2020), where they can face many stressors and adversities specific to the workplace, such as career setbacks (e.g., demotion), interpersonal conflict, and a lack of organisational support (King & Rothstein, 2010). Work-related stress can significantly impact the health outcomes

of employees (Goh et al., 2015), which may lead to considerable costs, e.g., from productivity-related losses or healthcare and medical costs for the employees (Hassard et al., 2018). Further, this thesis focuses on the mental health nursing workforce, who, as described above, experience specific forms of workplace stress and impacts.

Research into resilience in the workplace explores the processes by which people can develop resilience in the context of their work. McLarnon and Rothstein's (2013) dynamic, process-based model of resilience (Figure 1.1) illustrates resilience processes at work, and is consistent with the conceptualisation of resilience described above (McLarnon & Rothstein, 2013; Vella & Pai, 2019). The model indicates that when facing challenges (such as heavy workloads and conflicts), individuals may initially experience a period of disequilibrium as they attempt to make sense of the situation. They draw on *personal characteristics* (such as optimism, cognitive and emotional skills, and cultural or religious beliefs) and *external resources* (including family support or mentoring) to make meaning of challenging events and engage in a resilience process to recover from the experience and restore their wellbeing and work performance (i.e., high job performance, wellbeing, or a successful career) (King & Rothstein, 2010). As King and Rothstein (2010) contend, these processes include affect (emotional) regulation (i.e., the ability to self-reflect, have a higher awareness of, and regulate one's own emotions, to maintain positive affect), behavioural capacities (such as self-efficacy and problem-solving ability to generate a sense of control over adversity) and cognitive processes (drawing on own belief systems such as dreams and goals), to generate a sense of meaning from an adverse experience.

Figure 1.1: Conceptual Model of Resilience (Adapted from McLarnon & Rothstein, 2013)



1.6.3 Workplace Resilience Interventions

1.6.3.1 | Prior Research on Resilience Interventions. Over the past several decades, many randomised controlled trials have been conducted to test the validity of resilience interventions in the workplace. Between 1979 and 2014 there were a total of 43 published randomised controlled trials of resilience interventions in corporate environments, the military, police force, medical and health services, and academia (Chmitorz et al., 2018). A systematic review and meta-analyses of these trials (Chmitorz et al., 2018) found that there was a significant heterogeneity in the conceptualisation of resilience (i.e., as a trait, a process, or as an outcome), in the outcomes measured for resilience (e.g., mental health and stress), and in study methodology (e.g., some studies lacked post-intervention assessment). Thus, it has been difficult to draw definitive conclusions about the efficacy of these interventions.

Further, between 1990 and 2020, there were 24 randomised controlled trials on 26 resilience interventions reported in the wider field of nursing (Kunzler et al., 2022). These interventions included content on mindfulness and relaxation, cognitive strategies, problem-solving, emotional regulation, psychoeducation, and the enhancement of internal and external resources. The systematic review and meta-analysis by Kunzler et al. (2022) indicated that there was very low certainty showing moderate positive effects of the resilience interventions on nurses' wellbeing (standardized mean difference [SMD] = 0.44; 95% confidence interval [CI] = 0.15-0.72), which was sustained short-term at three-month follow-up, and resilience (SMD = 0.39; 95% CI = 0.12-0.66). Nine of the 26 resilience interventions showed evidence of positive effects on primary outcomes such as wellbeing (Duchemin et al., 2015; Hosseinnejad et al., 2018), resilience (Bernburg et al., 2019; Chesak et al., 2015; Khoshnazary et al., 2016), depression (Alexander et al., 2015), anxiety (Chesak et al., 2015), and perceived stress (Bernburg et al., 2019; Chesak et al., 2015; Fei, 2019; Lin et al., 2019).

1.6.3.2 | Resilience Interventions at Work. Importantly, King and Rothstein's (2010) model of resilience suggests that resilience can be developed and practiced through workplace education and interventions that strengthens individuals' capacity to deal with work and life adversities and achieve positive outcomes. Several workplace resilience interventions have been implemented with a theoretical perspective on resilience that is consistent with King and Rothstein's (2010) model. These generally take a universal prevention stance (i.e. directed toward entire populations) to prevent the occurrences of new mental health problems. However some resilience interventions take a selective or indicated prevention approach focused on individuals who are at higher risk (because they are part of a vulnerable group or already have symptoms of mental distress) (Shochet et al., 2011). Among these interventions are the Promoting Adult Resilience (PAR) program for employees from a resource-sector company (Millear et al., 2008), and employees from the human-service

department of a government organisation (Liossis et al., 2009), and the Promoting Resilience Officers (PRO) program for the police force (Shochet et al., 2011).These programs are iterations from the original evidence-based Resourceful Adolescent Program (Shochet et al., 2001), and are the antecedents to the current Promoting Resilience in Nurses (PRiN) program (Shochet et al., 2019) implemented in this thesis.

The theoretical basis for this suite of resilience programs includes the integration of cognitive behavioural theory and interpersonal theory (Shochet et al., 2011) with posttraumatic growth theory (Shakespeare-Finch et al., 2014). The cognitive behavioural therapy components encompass stress management and cognitive restructuring techniques to equip participants with the skills to reappraise a stressful situation (i.e., using positive self-talk) and to manage situations with greater calmness. The interpersonal components help improve interpersonal relationships and capacity to manage difficult interpersonal situations where there is conflict. Together, these components enhance participants' capacity for self and affect regulation (Shochet et al., 2011). The PRO program also incorporated components on trauma and posttraumatic growth (i.e., positive adaptation following a traumatic experience) to address participants' frequent exposure to traumatic events (Shakespeare-Finch et al., 2014). The programs are salutogenic in focus (i.e., emphasising the origins of health, and factors that promote human health and wellbeing) (Mittelmark et al., 2021) and strengths-based (emphasising strengths rather than deficits). Participants are consistently encouraged to reflect on their strengths and resources. These antecedent programs were found effective in reducing workplace stress, improving work satisfaction, enhancing personal coping self-efficacy (i.e., an individual's perceived competence to cope effectively against challenges; Chesney et al., 2006), facilitating posttraumatic growth, and promoting positive mental wellbeing (Liossis et al., 2009; Millear et al., 2008; Shakespeare-Finch et al., 2014).

1.6.3.3 | The PAR Program with Mental Health Nurses. In mental health nursing, investigation of workplace resilience interventions has been scarce (Bui et al., 2023b; Foster et al., 2019). To address this gap, a feasibility study of the PAR program (Foster, Cuzzillo, et al., 2018) was originally conducted in 2017-18 at NorthWestern Mental Health (a large tertiary metropolitan public mental health service in Victoria, Australia and the site for the current study). This study followed a discussion at the time between the research leader (Principal Investigator of the PRiN trial), the health service leader (Director of Nursing NWMH) and the Chief Mental Health Nurse, SaferCare Victoria, in relation to interventions that could address nursing workforce stressors such as occupational violence and support workforce needs (e.g., support nurses' wellbeing, and improve retention). The research leader chose an existing resilience intervention (i.e., the PAR program) from the literature that had a strong theoretical basis and addressed mental health nursing workforce stressors and needs.

The multimodal, strengths-based and evidence-based program (PAR) is manualised, uses exercises and activities, PowerPoint and video materials, and is delivered face-to-face in a peer group setting. The content consisted of seven modules that were originally designed to be delivered weekly face-to-face by trained facilitators (Foster, Shochet, Wurfl, et al., 2018). In conjunction with the program developers and the Director of Nursing, the researchers altered the structure of program, integrated the seven modules into six, and changed the delivery structure so that the modules were delivered across two x one day workshops spread three weeks apart, rather than weekly. This was to facilitate release of staff from shifts. The researchers also included the posttraumatic growth content from a previous version of the program (Promoting Resilient Officers/PRO) (Shakespeare-Finch et al., 2014) as this was relevant to the mental health nursing workforce. Senior nurses at NWMH with experience in education were then trained by the program developers to deliver the program face-to-face to staff and received supervision by the developers during the feasibility study.

The team piloted the PAR program in a feasibility study with a small sample (n = 24) of nurses at NWMH (Foster, Cuzzillo, et al., 2018; Foster, Shochet, Wurfl, et al., 2018). The PAR program was found to reinforce MHNs' use of personal strengths (e.g., open-mindedness and compassion), interpersonal resources (such as support from family and colleagues), and self-regulation (i.e., the ability to control and regulate one's thoughts, emotions, and behaviours; Reed et al., 2020) to manage workplace stress (Foster, Shochet, Wurfl, et al., 2018; Shochet et al., 2011). It was effective in improving nurses' coping self-efficacy (i.e., nurses' perceived ability to cope effectively with challenges; $r = 0.38$, $P < 0.01$) (Foster, Shochet, Wurfl, et al., 2018), which was measured with the 26-item Coping Self-efficacy Scale (Chesney et al., 2006), and also effective in improving cognitive self-regulatory behaviours (a sub-scale of the Workplace Resilience Inventory [WRI]; $r = 0.38$, $P < 0.05$). Additionally, nurses' anxiety and stress, which were measured with the Depression, Anxiety and Stress Scale (DASS 21), were reduced after the program ($r = 0.36$, $P < 0.05$) and three months after the program ($r = 0.39$; $P < 0.05$), respectively. The program was considered to have potential to help improve job satisfaction and workforce retention (Foster, Cuzzillo, et al., 2018).

While there was no formal process evaluation conducted alongside the feasibility study of the PAR program, some process evaluation data were included. The program was delivered with strong fidelity (85% of content units completely delivered), nurses' satisfaction with the program was very high (range = 4.2 – 4.7 on a 5-point Likert scale) and satisfaction with skills learnt was high to very high (range = 3.8 – 4.5 on a 5-point Likert scale; Foster, Shochet, Wurfl, et al., 2018). Mental health nurses gained a better understanding of resilience and were able to apply resilience strategies from the program (e.g., controlling negative thoughts and behaviours, and positive self-talk) into their professional practice (Foster, Cuzzillo, et al., 2018). They reported reduced stress and anxiety

level and felt more confident coping with workplace stress (Foster, Cuzzillo, et al., 2018). Nurses found the program valuable for reinforcing their understanding of resilience, and for identifying and developing skills and strategies to strengthen their resilience (Foster, Cuzzillo, et al., 2018).

1.7. The Promoting Resilience in Nurses (PRiN) Program (Shochet et al., 2019)

Following the successful piloting of the antecedent PAR program (which had not been specifically tailored for MHNs) at NorthWestern Mental Health, the research leader collaborated with the program developers and senior nurses from NWMH to lead a formal adaptation of the PAR program for mental health nurses. The adaptation included tailoring videos to be specific to mental health nursing, adapting the wording of some workbook content and activities to be specific to mental health nursing work, and the formal inclusion of posttraumatic growth content. The existing structure and delivery of the PAR program was retained. In the process, the PAR program was renamed the Promoting Resilience in Nurses (PRiN) program (Shochet et al., 2019). An Australian Research Council Linkage grant was gained (in partnership with Safer Care Victoria, Australian Nursing & Midwifery Federation in Victoria, Health and Community Services Union in Victoria, Queensland University of Technology, Monash University, and University of Canberra) to conduct a randomised controlled trial of PRiN, and the parallel process evaluation that comprises this thesis, at NWMH between 2021 and 2022 to determine the effects of the PRiN program on MHNs' coping self-efficacy (primary outcome), psychological distress, wellbeing, resilience, posttraumatic growth, emotional intelligence behaviours, workplace belonging, and turnover intention.

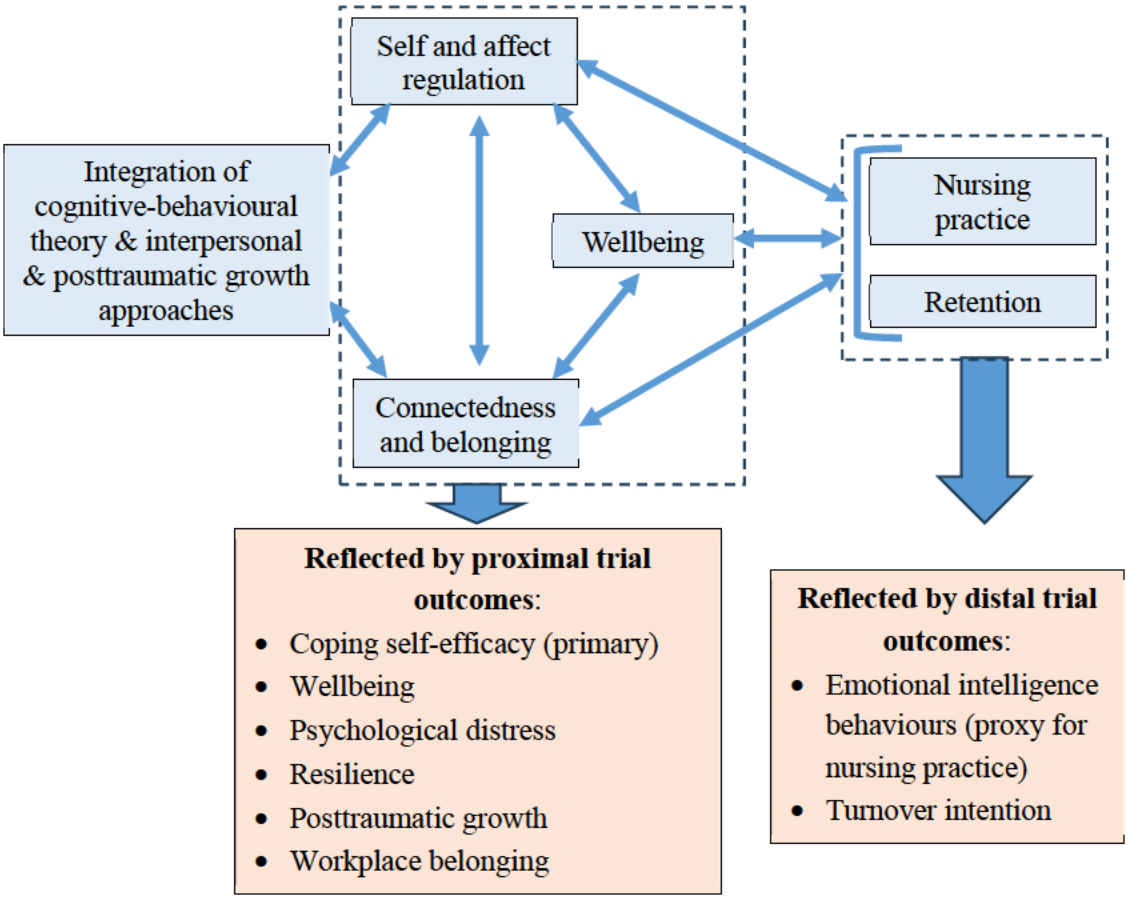
The theoretical model of the PRiN program (Figure 1.2) was developed by the research team (including the program developers) at the time of the trial design and grant

funding (Foster, Shochet, Shakespeare-Finch, et al., 2018). Consistent with the antecedent PAR and PRO programs (Section 1.6.3), the strengths-based PRiN program is situated in the salutogenic paradigm and underpinned by the integration of cognitive behavioural theory, interpersonal theory, and posttraumatic growth (PTG) theory to promote self and affect regulation. The proximal and distal outcomes measured in the trial are explained below in Chapter 1.8.

The program aims are to:

- Promote nurses' resilience
- Increase mental health and wellbeing in the workplace
- Improve relationships and decrease conflict by improving interpersonal and communication skills
- Promote stress management skills
- Increase nurses' ability to manage and regulate emotions in times of stress and adversity
- Promote capacity for posttraumatic growth (Shochet et al., 2019)

Figure 1.2: Theoretical Model of the Promoting Resilience in Nurses (PRiN) Program (Foster, Shochet, Shakespeare-Finch, et al., 2018)



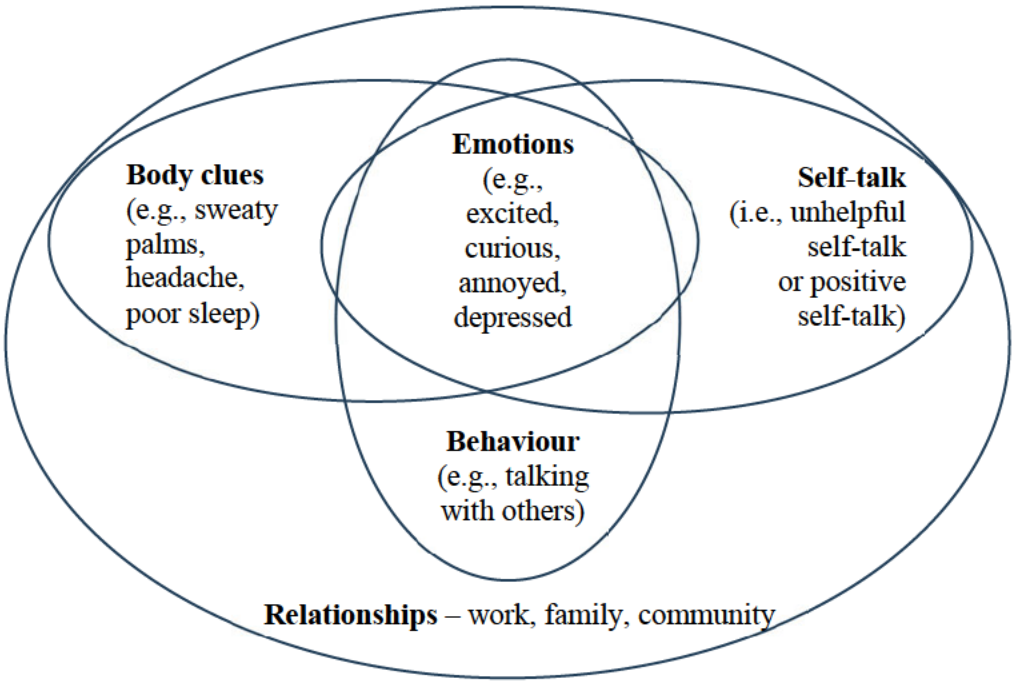
The program has six modules delivered face-to-face in a peer-group setting by trained facilitators (who were experienced senior MHNs) over two one-day workshops spread three weeks apart. The facilitators employed a range of teaching modalities such as workbooks, PowerPoint presentations, large and small group discussions, and individual tasks. Between the two workshop days and for three weeks after completion of the second workshop, participants received 'booster' activities in the form of weekly SMS messages that reinforce particular elements of the program, such as encouraging participants to reflect on their use of positive self-talk throughout the week.

Table 1.1: PRiN Program Modules and Content Units (Shochet et al., 2019) ©

Workshop day	Program modules	Content unit
Workshop day 1	**Module 1 – We can all be resilient**	1.1 - Introduce program 1.2 - Define resilience and related content 1.3 - Identifying and building your individual strengths 1.4 - Introduce the PRiN model
	Module 2 – Cool and calm: understanding and managing stress	2.1 - Understanding sources of stress 2.2 - Understanding how stress affects us 2.3 - How are we more effective when we are calm? 2.4 - Exploring ways of keeping calm using the PRiN model 2.5 - Practice relaxing
	Module 3 – I am what I think and I can change what I think	3.1 - Identifying and challenging unhelpful self-talk 3.2 - Learning ways to challenge unhelpful self-talk 3.3 - Practice challenging unhelpful self-talk 3.4 - Practice thinking resiliently
Workshop day 2	**Module 4 – Promoting positive relationships**	4.1 - How do we promote harmony 4.2 - Practice empathetic communication
	Module 5 – Managing conflict and drawing strength from adversity	5.1 - Dealing with conflict positively 5.2 - Recognising our support systems 5.3 - Exploring post traumatic growth 5.4 - Promoting a sense of belonging
	Module 6 – Putting it all together	6.1 - Creating our own solutions for wellbeing 6.2 - Acknowledging how far we have come 6.3 - Ending on a positive note 6.4 - Saying goodbye

The theories are conveyed to participants using the PRiN Model (Figure 1.3). The model explores five resilience-promoting factors: body clues, self-talk, behaviour, relationships, and emotions. The model indicates people's behaviour and emotions can both influence and be influenced by body clues (i.e., bodily signals such as sweaty palms), self-talk (i.e., what people say to themselves), and relationships with others. Participants are taught to identify and manage body clues, understand and challenge unhelpful self-talk, and maintain positive self-talk when facing difficult situations. They also discuss how supportive relationships – including connectedness and a sense of belonging – may affect the other four resilience-promoting factors, and practiced communication skills such as empathy and active listening (Shochet et al., 2019).

Figure 1.3: The PRiN Model ©, Shochet and colleagues, Queensland University of Technology (Shochet et al., 2019)



Following the program, it was anticipated that MHNs would be able to better apply resilience strategies to effectively navigate workplace challenges and manage stress. These strategies included reappraising difficult workplace situations, challenging unhelpful self-talk, approaching problems with greater calmness, and developing a stronger sense of belonging within a positive, harmonic workplace culture. The positive impacts of the program on MHNs' wellbeing were anticipated to manifest through the proximal outcomes that were targeted in the program including coping self-efficacy, wellbeing, resilience, posttraumatic growth, workplace belonging, and reduced psychological distress. Additionally, there was potential for the program to impact MHNs' clinical practice and retention, which was reflected in the distal outcomes of emotional intelligence behaviours (an important aspect of MHNs' practice) (Sharrock, 2021) and turnover intention.

1.8. Promoting Resilience in Nurses Program: A Randomised Controlled Trial

A partially clustered randomised controlled trial of PRiN was conducted by the research team between 2021 - 2022 with MHNs at NorthWestern Mental Health. The health service at the time consisted of six distinct areas (comprising a total of 11 inpatient and rehabilitation units, 15 community teams, and four nursing transition-to-practice programs) and employed approximately 695 nursing staff at commencement of the trial. The primary aim of the trial was to examine the effects of the PRiN program on MHNs' coping self-efficacy (i.e., the primary outcome). The trial also sought to determine how the program impacted MHNs' psychological wellbeing, psychological distress, resilience, posttraumatic growth, workplace belonging, emotional intelligence behaviours, and turnover intention (i.e., the secondary outcomes) (Foster, Shochet, et al., 2024). As noted, these were proximal (i.e., outcomes directly addressed by the program) and distal (i.e., long-term outcomes indirectly addressed by the program which might not be immediately observed after the intervention) (Figure 1.2). It is important to note that emotional intelligence behaviours were chosen as a

proxy measure for mental health nursing practice in the trial and is therefore in the model as a distal outcome, however, emotional regulation is part of the program theory and content.

To be eligible for the trial, enrolled and registered nurses needed to be working clinically at NorthWestern Mental Health at least 0.6 full-time equivalent, and not have previously participated in the pilot study of the PAR program at the health service. Self-report online surveys to measure these outcomes were administered to both the intervention and the control groups upon registration to the study (time 1; T1), after program delivery (time 2; T2) and at three months after the program (time 3; T3). Only nurses in the intervention group received the PRiN program. The trial was prospectively registered on the Australian and New Zealand Clinical Trials Registry (registration number ACTRN12620001052921) (Foster, Shochet, et al., 2024). See Appendix 15 and Appendix 16 for copies of two publications of trial findings. A mixed methods process evaluation (the current thesis) was planned alongside the trial, with aims to identify factors that may help explain variation in participant outcomes (between the intervention and control arms) in the trial, and to evaluate the PRiN program implementation.

1.9. Mixed Methods Process Evaluation of the PRiN Randomised Controlled Trial

Process evaluations of intervention trials have increasingly been conducted in parallel with, or following, intervention trials to explore trial processes and underlying mechanisms that may help explain the trial results (i.e., why an intervention works or fails to work) and to understand how an effective intervention can be optimally implemented (Skivington et al., 2021). While trials evaluate clinical effectiveness, they are not designed to capture the factors that may have influenced the implementation of the intervention being evaluated (Skivington et al., 2021). An intervention that is effective under ideal trial conditions might not necessarily be implementable, cost effective, scalable, or acceptable in the real world

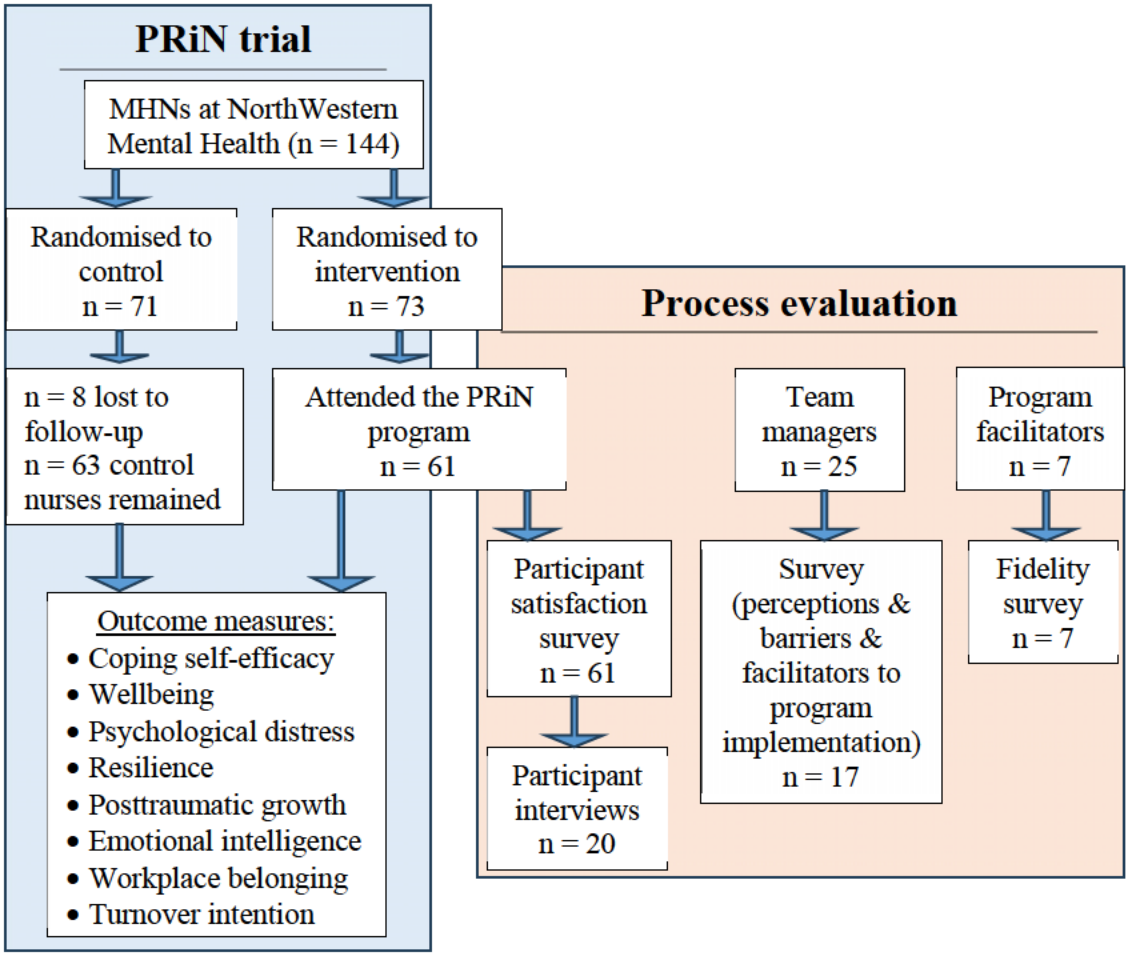
(Skivington et al., 2021), hence a process evaluation is relevant to examine the perspectives of those exposed to the intervention, those who delivered the intervention, and those who implemented the intervention in an organisation (Skivington et al., 2021).

Emphasising the importance of process evaluations in the implementation of complex interventions, the Medical Research Council (MRC) has published several frameworks over the years to guide the conduct of process evaluations (Craig et al., 2008; Moore et al., 2015; Skivington et al., 2021). These MRC frameworks suggest that when designing a process evaluation, researchers should consider intervention fidelity and quality, clarify the causal mechanisms (i.e., how intervention theories and designs may lead to the expected or unexpected outcomes), and identify contextual facilitators and barriers associated with variation in both participant outcomes (e.g., participant stress levels) and implementation outcomes (e.g., the degree of acceptability of the intervention to participants) (Skivington et al., 2021).

In this thesis, the process evaluation was conducted alongside the trial at NorthWestern Mental Health between 2021 and 2022 (Figure 1.4). The process evaluation involved MHNs (who participated in the PRiN program), managers and team leaders (who encouraged staff to participate, sent out the trial registration link, and organised staff release from the roster to participate in the program), and program facilitators (senior nurses trained by the program developers to deliver the program). The process evaluation was conducted to explore program fidelity (i.e., the extent to which the program was delivered as intended) and the quality of its delivery. The process evaluation also examined the perceptions, experiences, and satisfaction of those involved in the program (nurses) and its implementation (managers), and barriers and facilitators to program implementation at the health service (managers). The findings also provide insights into factors contributing to positive changes in nurses'

outcomes in the trial (i.e., the variation in outcomes between the intervention and control nurses).

Figure 1.4: Overview of the PRiN Randomised Controlled Trial and Process Evaluation



1.9.1 Normalisation Process Theory

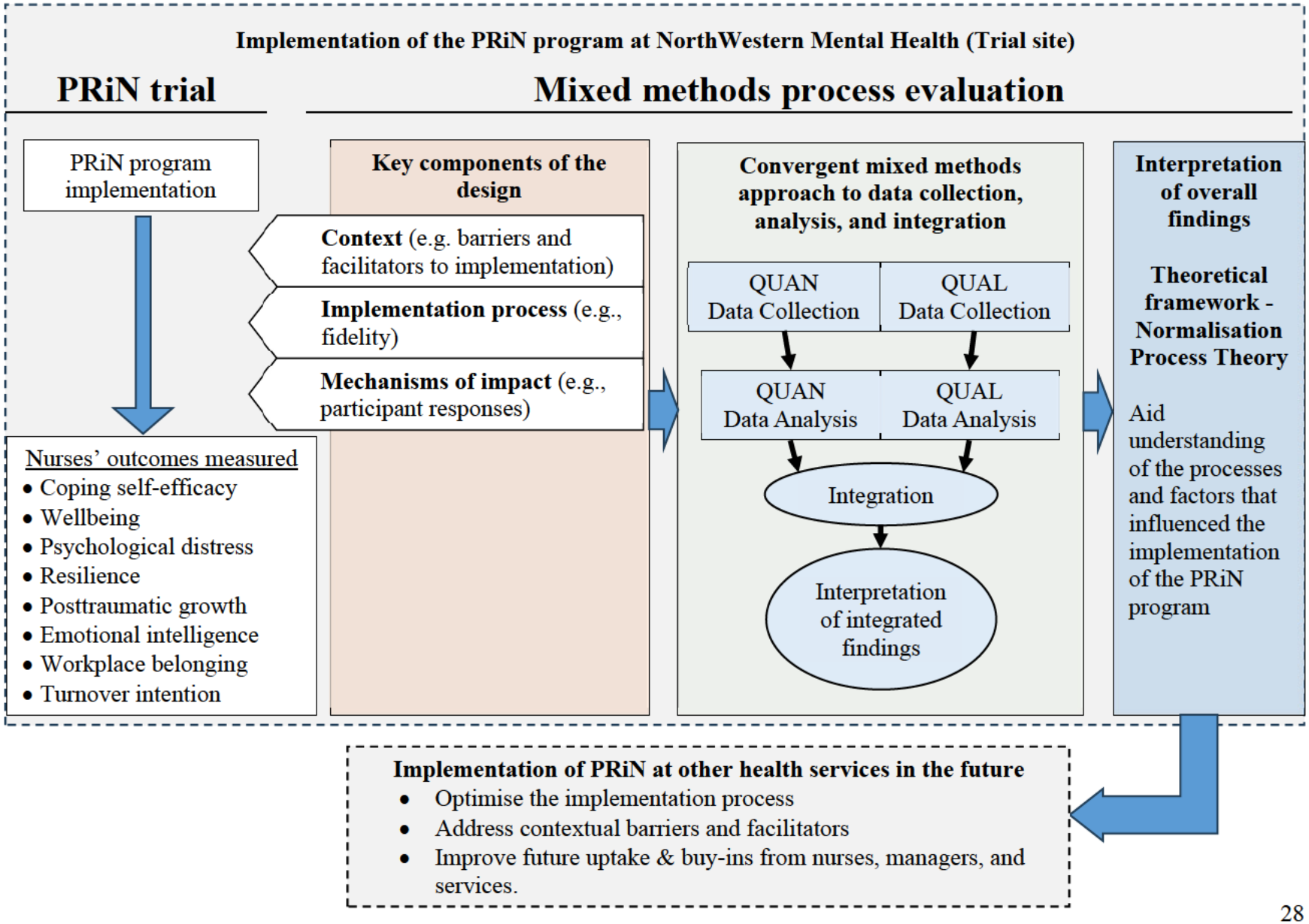
In this process evaluation, Normalisation Process Theory (NPT) was applied as a conceptual framework to aid interpretation of findings on PRiN program implementation. Normalisation Process Theory is a middle-range sociology theory of action developed by May and colleagues (2009), and has been used extensively in implementation research and process evaluations (May et al., 2018). The theory is flexible and can be applied at any stage of the research process (May et al., 2018). In this thesis, NPT was used in the interpretation

stage (Figure 1.5) to sensitise the interpretation of research findings in exploring factors that may have influenced the implementation process of the PRiN program at the health service. These factors relate to the setting in which the program was implemented (i.e., the health organisation), the individual and collaborative work (e.g., by nurses and other staff at the organisation) to implement the program in the setting, and the potential outcomes of program implementation for nurses' practice and wellbeing (May et al., 2022). This provides valuable insights that can inform the post-trial refinement of the program and its implementation in other healthcare settings.

1.9.2 Overview of Research Design

A mixed methods process evaluation was conducted for this thesis with the aims to identify factors that may help explain variation in participant outcomes between the intervention and control arms in the randomised controlled trial of the PRiN program, and to evaluate PRiN program implementation. The thesis is positioned within the research framework of pragmatism and employs a convergent mixed methods approach to data collection, analysis, and integration (Creswell & Plano Clark, 2018; Younas et al., 2020). This approach produces complementary forms of evidence: quantitative survey data on program fidelity, and barriers and facilitators to program implementation, and qualitative data on nurses' and managers' perceptions, and nurses' experiences, of the program, to comprehensively address the thesis aims. Normalisation Process Theory was used as a conceptual framework to sensitise interpretation of process evaluation findings to deepen understanding of these findings (May et al., 2018). The design is summarised in Figure 1.5.

Figure 1.5: Overview of the Mixed Methods Process Evaluation Design



1.10. Thesis Overview

This thesis was prepared according to the Australian Catholic University's guidelines on the preparation and presentation of a PhD thesis with publication. There are a total of ten chapters (as summarised in Table 1.2); three of which include published peer-reviewed journal articles.

Chapter 1 provides the context and background to the thesis and includes an overview of the contemporary issues and stressors related to mental health nursing practice and how resilience interventions may address these issues. The partially clustered randomised controlled trial of the Promoting Resilience in Nurses (PRiN) program and parallel process evaluation methodology that forms this thesis are outlined.

Chapter 2 presents a published integrative literature review (2023) that provided an update of evidence on resilience research in the field of mental health nursing. The published manuscript is titled, *Resilience and mental health nursing: An integrative review of updated evidence*. The chapter also provides further update of evidence on this topic since the published review.

Chapter 3 describes and presents pragmatism as the research framework, and the process evaluation design used in this thesis. The rationale for the convergent mixed methods approach to data collection, analysis, and integration are presented. The chapter includes the published process evaluation protocol manuscript titled, *Protocol for a mixed methods process evaluation of the Promoting Resilience in Nurses (PRiN) trial*.

Chapter 4 expands on the published protocol to provide additional information on the process evaluation methods, including study setting, data collection and management, ethical considerations, and integration and interpretation of qualitative and quantitative data.

Chapter 5 presents the first set of evaluation findings. These are survey and checklist findings that report program participants' and managers' perspectives of, and satisfaction with, the PRiN program; barriers and facilitators to program implementation; and fidelity findings on whether the PRiN program was delivered as intended.

Chapter 6 presents the findings from semi-structured interviews of program nurses' experiences of the PRiN program, and how they applied the knowledge and skills learnt in PRiN to their personal life and clinical practice.

Chapter 7 includes the second set of semi-structured interview findings on program nurses' experience and impacts of the COVID-19 pandemic on the resilience of mental health nurses. The published article titled, *Mental health nurses' experience of resilience during COVID-19: A qualitative inquiry*, is the third and final publication embedded in the thesis.

Chapter 8 presents the meta-inferences that were derived from integration of the PRiN randomised controlled trial outcomes with key quantitative and qualitative process evaluation findings (described in Chapter 5, 6 and 7), to identify factors that may help explain variation in trial outcomes between the intervention and control groups.

Chapter 9 is the Discussion chapter and provides interpretation and discussion of the key findings for the two main aims of the thesis. The meta-inferences (from Chapter 8) are discussed in relation to the wider mental health nursing and nursing literature on resilience interventions with regard to factors that may help explain variation in participant outcomes in the trial of the PRiN program. The chapter then discusses the PRiN program implementation at the health service, using Normalisation Process Theory to sensitise process evaluation findings (from Chapter 5, 6 and 7).

Chapter 10 provides conclusions, implications, and recommendations from the thesis to guide future implementation of the PRiN program at other health organisations, and to inform the direction of future research on resilience interventions. Strengths and limitations of this thesis are also identified.

Table 1.2: Outline of Thesis Structure

Thesis Preface, Information, Glossary of Terms, and Table of Contents	
Chapter 1	Introduction and Background
Chapter 2	Literature review (Publication)
Chapter 3	Methodology (Publication)
Chapter 4	Methods
Chapter 5	Satisfaction, acceptability, and fidelity findings
Chapter 6	Qualitative descriptive findings: Program nurses' experiences with PRiN
Chapter 7	Interpretive qualitative findings: Program nurses' experiences with resilience during COVID-19 (Publication)
Chapter 8	Integration and meta-inferences
Chapter 9	Discussion
Chapter 10	Conclusion and recommendations
References	
Appendices	

Chapter 2: Literature Review

2.1. Chapter Introduction

This chapter presents a published peer-reviewed integrative review, *Resilience and mental health nursing: an integrative review of updated evidence* (Bui et al., 2023b). An integrative review methodology enables synthesis of evidence across articles using a range of research methodologies – including experimental (i.e., quantitative) and non-experimental (e.g., qualitative studies), as well as inclusion of theoretical or discussion papers (Whittemore & Knafl, 2005). The review method was therefore chosen to enable the inclusion of evidence from a diverse range of research. The review provides the background for this thesis and identifies current gaps in literature on resilience research in the field of mental health nursing. It offers an overview of the challenges MHNs face in their clinical practice, the state of research into resilience in mental health nursing, and how the evidence can be applied to target the negative impacts of workplace challenges on MHNs' wellbeing and practice.

The review presented here builds on a previous integrative review by Foster et al. (2019) on the same topic and serves as an update of research evidence on resilience in mental health nursing in recent years. Unlike Cochrane methods for systematic review, where updating a review to include the most recent evidence is a common practice, updating existing integrative reviews with contemporary evidence has not been done previously, and there were no established guidelines for this process. A similar process to the original review was employed, following the integrative review methodology by Whittemore and Knafl (2005) and utilising similar search terms/strategy. This approach allowed for a comparison of the updated findings with those of Foster et al.'s (2019) original review.

In the published review (Bui et al., 2023b), literature from July 2018 to June 2022 was included. In order to provide the most contemporaneous literature for this thesis, a subsequent

systematic search to identify additional relevant literature between July 2022 and June 2024 was then conducted in July 2024. The updated evidence on resilience in mental health nursing is presented following the published integrative review.

2.2. Publication 1: Resilience and Mental Health Nursing: An Integrative Review of Updated Evidence.

The article was published on the 10th of February 2023 in the *International Journal of Mental Health Nursing* (Bui et al., 2023b). An authorship statement of contribution (Appendix 1) is included. The journal is currently ranked Q1 (SJR = 1.572) by SCImago (n.d.), is the top ranked journal for mental health nursing, and has an impact factor of 3.6 (Clarivate, 2023). Full citation for the article is as follows:

> Bui, M. V., McInnes, E., Ennis, G., & Foster, K. (2023). Resilience and mental health nursing: An integrative review of updated evidence. *International Journal of Mental Health Nursing, 32*(4), 1055–1071. https://doi.org/10.1111/inm.13132

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REVIEW ARTICLE

Resilience and mental health nursing: An integrative review of updated evidence

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Abstract

Mental health nursing work is challenging, and workplace stress can have negative impacts on nurses' well-being and practice. Resilience is a dynamic process of positive adaptation and recovery from adversity. The aims of this integrative review were to examine and update understandings and perspectives on resilience in mental health nursing research, and to explore and synthesize the state of empirical knowledge on mental health nurse resilience. This is an update of evidence from a previous review published in 2019. Using integrative review methodology, 15 articles were identified from a systematic search (July 2018–June 2022). Data were extracted, analysed with constant comparison method, synthesized narratively and then compared with the findings from the original review. As an update of evidence, mental health nurse resilience was moderate to high across studies, was positively associated with psychological well-being, post-traumatic growth, compassion satisfaction and negatively associated with burnout, mental distress and emotional labour. Lack of support and resources from organizations could negatively impact nurses' ability to maintain resilience and manage workplace challenges through internal self-regulatory processes. A resilience programme improved mental health nurses' awareness of personal resilience levels, self-confidence, capacity to develop coping skills and professional relationships. Some studies continue to lack contemporary conceptualizations of resilience, and methodological quality varied from high to low. Further qualitative and interventional research is needed to investigate the role of resilience in mental health nursing practice, personal well-being, workforce sustainability and the ongoing impacts of the COVID-19 pandemic.

KEYWORDS
integrative review, mental health nursing, resilience, well-being, workplace stressors

INTRODUCTION

Mental health nursing work is interpersonal in nature and mental health nurses (MHNs) often use themselves (i.e. their mental, emotional and relational skills) as the therapeutic tool to provide care for mental health consumers (Zugai et al., 2015). As a result, MHNs can experience workplace stress related to interpersonal interactions with consumers and work colleagues. They may also experience organizational and other occupational stressors. These can have negative consequences on the health and well-being of MHNs (Cranage & Foster, 2022) and impact the sustainability of mental health nursing workforce (Adams et al., 2021). Resilience is a dynamic process of positive adaptation following stressful events. A resilient process in response to adversity can be protective against the negative impacts of stressors and support positive well-being outcomes for MHNs (Foster et al., 2019). An integrative review by Foster et al. (2019) was the first systematic form of

review and synthesis on evidence about resilience in this specialty field. To provide an update on the growing evidence base on resilience in mental health nursing, this integrative review investigates empirical evidence in the field published since the original review (Foster et al., 2019) and compares this evidence to the original review findings.

BACKGROUND

In their daily practice, MHNs face significant interpersonal and organizational workplace stressors. Through interactions with consumers, carers and staff, MHNs may experience confrontational behaviours, verbal/physical aggression, high emotional demands and/or bullying (Baby et al., 2014; Cranage & Foster, 2022; Edward et al., 2017). At the organizational level, stressors can include staff shortages, poor skill mix, high workload, lack of resources (e.g. beds or functional equipment) and supports such as staff trainings and debriefings (Foster et al., 2021; McTiernan & McDonald, 2015). The COVID-19 pandemic has added a further layer of complexity. MHNs have needed to adapt to rapid changes in the workplace and follow social distancing and COVID management guidelines (including use of COVID protocols, personal protective equipment and inpatient unit restructuring) to continue delivering high level care (Foye et al., 2021).

Workplace challenges can precipitate negative changes to MHNs' physical and psychological health (depression, anger and post-traumatic stress disorder; Hsieh et al., 2018; Kelly et al., 2016; Lee et al., 2015). Stress can also compromise MHNs' capacity to practice, as stress is associated with burnout, compassion fatigue and higher turnover intention (Kagwe et al., 2019; Konstantinou et al., 2018; Marshman et al., 2022). Strategies that might help MHNs manage workplace stress therefore have important implications to their well-being and practice, and to create a sustainable mental health nursing workforce.

Resilience can be understood as the dynamic process of positive adaptation and recovery in response to stress and adversities (Foster et al., 2019). In the workplace, this process involves affective, cognitive and behavioural self-regulatory processes, involving internal (e.g. cognitive appraisal ability or positive affect regulation) and external (employment supports or clinical supervision) resources that allow individuals to adapt and restore optimal functioning following stressful workplace events (McLarnon & Rothstein, 2013).

Resilience research has gained traction since 1979 and has undergone several 'waves' of enquiry. Initial research began in developmental studies, with researchers focussing on identifying 'resilient traits' exhibited by children who positively adapted and thrived in the face of significant life adversities (Garmezy & Streitman, 1974; Vella & Pai, 2019; Werner et al., 1971). Subsequent research investigated social and environmental factors (e.g. supportive community) that promoted resilience and their use in resilience-building interventions (Vella & Pai, 2019). More recently, there has been investigation on workplace resilience in healthcare (Bruria et al., 2022) and in nursing (Cooper et al., 2020) about internal and external factors that promote resilience against workplace challenges (Bruria et al., 2022; Cooper et al., 2022). In mental health nursing, to date, there has been one systematic review on the topic of resilience in the context of work. Foster et al. (2019) published an integrative review to explore the state of knowledge on resilience in mental health nursing literature and to examine understandings and perspectives on resilience in this field. Their findings included that resilience research was emergent in mental health nursing compared to other fields of nursing, and there was a prevailing focus on trait-based personal resilience definitions (i.e. resilience as a static inherent characteristic that helps individuals cope against adversity). In addition, there was only one article reporting on resilience interventions (Foster et al., 2019). The authors recommended that future resilience research in mental health nursing should use contemporary conceptualizations of resilience; there needed to be a shift in focus from resilience definitions that centre around individuals' characteristics to definitions that reflect resilience as a dynamic process encompassing interaction between individuals and the environment; and for researchers to use process-based resilience measures, for example, Workplace Resilience Inventory developed by McLarnon and Rothstein (2013) that incorporates personal and environmental resources, instead of trait-based resilience measures. They also recommended further research on the implementation and efficacy of resilience strategies and programmes (Foster et al., 2019).

Rationale for update of evidence

While there are no published guidelines on whether an integrative review should be updated, and how and when such updates should occur, guidance on updates for systematic forms of review (Garner et al., 2016) indicates it is appropriate to conduct an update on evidence from the original integrative review. First, the original review questions remain current and relevant to policymakers, researchers and organizations, as evident by the number of times the existing review has been cited. Second, there has been an increasing body of evidence on resilience in the field of mental health nursing published since the original review, and third, the COVID-19 pandemic has led to a renewed interest in staff resilience and well-being and highlighted the need to understand and address increasing levels of stress and attrition rates of nurses (Labrague, 2021). With an increase in studies on mental health nurse resilience over the past 4 years, there may be new evidence and understandings that can be used to inform future

TABLE 1 Search terms.

Content area	Boolean methods	Subject heading	Search terms
Nursing	OR	Mental health nurse	Psychiatric nurs*
		Psychiatric nursing	Mental health nurs*
	AND		
Resilience	OR	Adaptation, Psychological	Resilien*
		Coping	Adapt*
		Psychological Well-being	Coping
		Resilience, psychological	Withstand*
		Emotional Adjustment	Adjust*
		Hardiness	Resist*
			Wellbeing
			Well-being
			Overcome*
			Psycholog*
			Behav*
			Respon*
			Emotion*

policy, practice and research in the field. To provide an update on the growing evidence base on resilience in mental health nursing, this integrative review follows the same process undertaken by Foster et al. (2019) and synthesizes the empirical evidence in the field published since the original review, and then in the Discussion compares this evidence to the original review findings.

Aims

As the aims of the original review remain relevant, the intent in this review was to update empirical evidence in response to growing research on resilience since the original review, and to synthesize and extend the knowledge base in the field. The aims of this integrative review were therefore to examine and update understandings and perspectives on resilience in mental health nursing research, and to explore and synthesize the state of empirical knowledge on resilience in mental health nursing. To reflect the intent in the review, we have slightly revised the research questions: (i) What are the concepts of resilience in the mental health nursing literature? and (ii) What is the state of empirical knowledge on mental health nurses' resilience?

METHODS

Research design

We employed the same 5-stage integrative review methodology (Oermann & Knafl, 2021; Whittemore & Knafl, 2005) as the original review (Foster et al., 2019). This methodology is suitable for synthesizing knowledge from diverse sources of information and identifying current gaps of knowledge on the topic within a field (Oermann & Knafl, 2021). Using the research aims and questions, several key databases were searched using predetermined relevant search terms, and suitable studies were selected for data extraction, analysis and synthesis.

Inclusion and exclusion criteria

The inclusion criteria were as follows: peer-reviewed empirical research on resilience in relation to MHNs (enrolled and registered) or where findings for MHNs could be separated from other groups; and which were published between July 2018 and June 2022 in the English language. The exclusion criteria were as follows: research on undergraduate nurses, theoretical or discussion papers, editorials, non-peer-reviewed articles, literature reviews, dissertations and book chapters, conference proceedings and grey (unpublished) literature.

Data searches and sources

The search terms shown in Table 1 were used to identify potentially relevant articles from the following databases: CINAHL Complete, MEDLINE Complete and PsycINFO. Reference lists of included articles were also manually searched to identify any potentially relevant studies not identified by electronic database search.

Screening and sifting

Screening was conducted using Covidence Systematic Review Software (2022), a web-based application that facilitates collaboration between multiple reviewers for data import, independent review and data extraction (Kellermeyer et al., 2018). Each article was independently screened by two authors. Titles and abstracts of 892 articles were screened and 19 of these were retained for full-text review. Four articles were further excluded, and 15 articles were extracted for review (see Figure 1).

Quality appraisal

Each article was assessed for quality by two researchers independently using the appropriate quality assessment tool. Qualitative studies were appraised using the Joanna Briggs Institute Checklist for Qualitative Research (Joanna Briggs Institute, 2020); mixed methods studies were appraised with Mixed Methods Appraisal Tool (Hong et al., 2018); and quantitative cross-sectional studies were evaluated using the Critical Appraisal of a Cross-Sectional Study (Survey) tool (CEBMa checklist; Center for Evidence Based Management, 2014). Any disagreements between the reviewers were discussed and resolved. In common with other systematic review methods (Higgins et al., 2019), studies were not excluded on the basis of quality assessment scores because there is no agreed weighting of individual quality criteria (Lundh & Gøtzsche, 2008).

Data extraction

For the first question—what are the concepts of resilience in the mental health nursing literature?—data related to authors' conceptualizations and perspectives

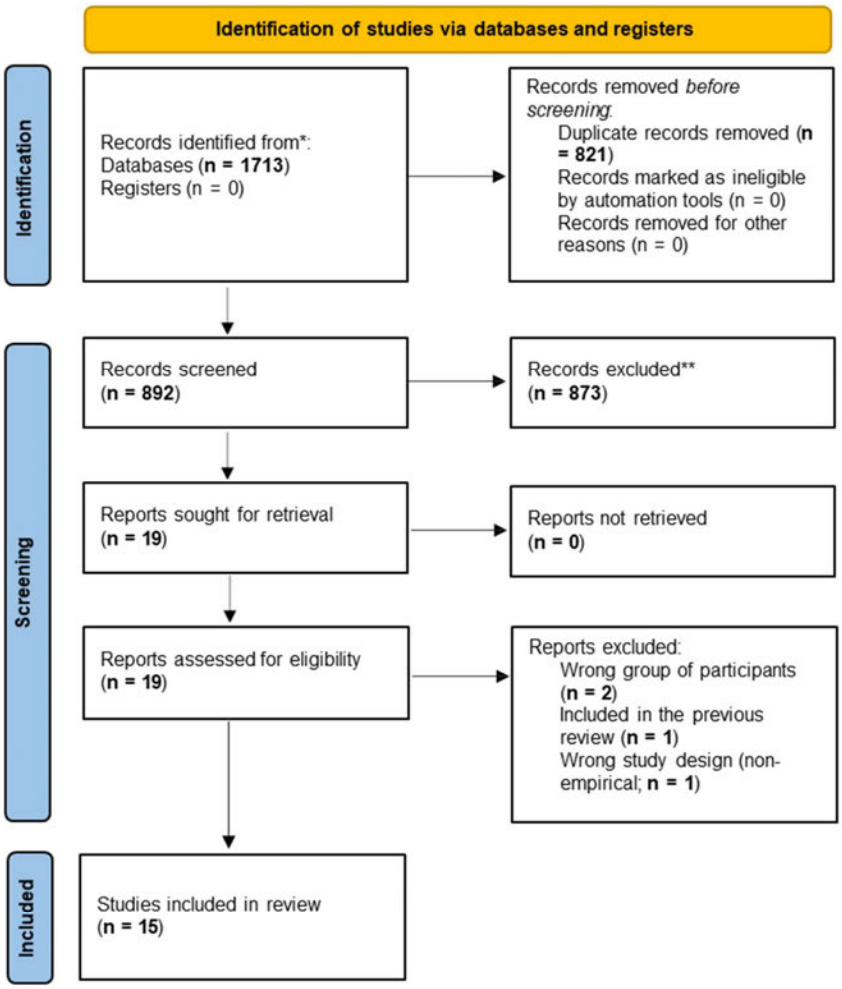

FIGURE 1 PRISMA flow chart for systematic reviews (Page et al., 2021). *From:* Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al., The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. https://doi.org/10.1136/bmj.n71.

of resilience were extracted. For the second question—What is the state of empirical knowledge on mental health nurses' resilience?—the 15 empirical studies were categorized into three subgroups according to method (i.e. quantitative studies, qualitative studies and mixed methods intervention studies) prior to data extraction. From the quantitative and intervention studies, empirical results on MHNs' resilience and associated constructs were extracted. From the qualitative studies and the qualitative phase of the mixed methods intervention studies, findings on MHNs' experience of building and maintaining resilience against workplace challenges were extracted. A data matrix spreadsheet was used to populate and organize the data for analysis.

Data analysis

To facilitate synthesis, extracted data were subjected to the constant comparison approach described by Whittemore and Knafl (2005). Extracted data were coded separately for each review question and for each study design, then grouped into similar subcategories (e.g. 'trait/quality/capacity' or 'process', 'well-being' or 'nursing practice'). In each subcategory, several analysis strategies (e.g. compare and contrast, pattern recognition and subsuming particulars into general) described by Whittemore and Knafl (2005) were employed to identify patterns and relationships between the data. Following subgroup analysis, findings were narratively synthesized and reported under the two review questions (i.e. 'theoretical concepts of resilience' and 'empirical knowledge on resilience in mental health nursing').

RESULTS

Description of the included studies

A total of 15 eligible empirical articles out of 892 screened records were retrieved from the database search. Figure 1 shows the numbers retrieved, excluded and sifted using PRISMA. Twelve articles were quantitative cross-sectional, two were qualitative and one was a mixed methods intervention study (pre-test and post-test quasi-experimental design with a qualitative phase; Table 2). Studies were predominantly from Australia (n = 4), China (n = 2) and Turkey (n = 2). The remaining were from USA (n = 1), UK (n = 1), Israel (n = 1), Iran (n = 1), South Africa (n = 1), Saudi Arabia (n = 1) and Singapore (n = 1). In terms of quality appraisal, four studies were rated as high quality (≥75%), eight were rated as moderate quality (50%–<75%) and three were rated as of low quality (<50%). Table 3 shows the quality appraisal results by study design. Thirteen studies focused solely on MHNs or nurses working in mental health settings, and the remaining two studies also included other mental health professionals or general nursing and public health students.

Theoretical concepts of resilience

Authors' conceptualizations of resilience were reported in all included articles. All authors based their understandings of resilience on previously established conceptualizations and drew on different resilience concepts (e.g. trait-like, capacity or process). Authors' referred to knowledge of resilience derived from several fields including psychology (n = 5; Chang et al., 2019; Delgado et al., 2020; Delgado et al., 2021; Delgado et al., 2022; Foster et al., 2020), nursing (n = 5; Dahan et al., 2022; Dogan & Boyacıoglu, 2021; Henshall et al., 2020;Majrabi et al., 2021; Xu et al., 2021), both nursing and psychology (n = 4; Abram & Jacobowitz, 2021; Dehvan et al., 2018; Ramalisa et al., 2018; Xu et al., 2022) and mental health nursing (Sukut et al., 2022). One study acknowledged there is a lack of an agreed definition of resilience in mental health nursing (Delgado et al., 2020), and two others noted that the primary focus of resilience research in mental health nursing has been on individual resilience rather than inclusive of its complex and multidimensional nature (Dahan et al., 2022; Delgado et al., 2020). Several studies identified that personal resilience was dependent on sociocultural context and that cultural differences in understandings and expressions of resilience might result in variation in resilience scores between studies (Chang et al., 2019; Dahan et al., 2022; Dehvan et al., 2018).

Resilience as an individual ability, capacity or trait

In eight studies, resilience was viewed as a personal quality, a capacity or an ability to cope (Dehvan et al., 2018; Henshall et al., 2020; Xu et al., 2022), to overcome challenges (Majrabi et al., 2021; Xu et al., 2021), to bounce back from adversity (Abram & Jacobowitz, 2021) or resist and thrive against adversities (Dogan & Boyacioglu, 2021; Ramalisa et al., 2018). Chang et al. (2019) defined resilience as a 'positive trait' (p. 1) and stated 'resilience was found to be a coping technique endorsed by mental health professionals' to manage work-related stress (p. 2). Other studies considered resilience as 'the opposite of vulnerability' (Dehvan et al., 2018, p. 369), referred to resilience as both 'a personal characteristic and a dynamic process' (Dogan & Boyacıoglu, 2021, p. 228), 'both a trait and a process' (Abram & Jacobowitz, 2021, p. 2) and as 'the capacity of resisting difficulties and

TABLE 2 Summary of included studies.

Author(s) (Year) Country	Article type/ design	Aims/purpose	Participants and setting	Data collection methods	Results/conclusions	Limitations	Quality rating
Abram and Jacobowitz (2021) USA	Quantitative Exploratory correlational design survey	Compare the levels of resilience and the relationship between resilience and burnout between two samples (inpatient psychiatric nurses and healthcare students)	51 inpatient MHNs recruited in 2012 from a psychiatric hospital in USA	(1) 15-item demographics questionnaire (2) 14-item Resilience Scale (RS-14) (3) Burnout Scale (10-item subscale from Professional Quality of Life)	For inpatient MHNs, resilience was inversely associated with burnout with a medium effect size. Age was a more robust predictor of resilience than work/school environment.	Small sample size from one service Poor description of sampling of the inpatient MHNs arm	CEBMa checklist 33% Low quality
Chang et al. (2019) Singapore	Quantitative Observational cross-sectional survey, correlational	Explore association between resilience and associative stigma among mental health professionals	462 mental health professionals including MHNs ($n = 201$) at a psychiatric hospital in Singapore	(1) Brief Resilience Scale (BRS) (2) 11-item survey on associative stigma adapted from other studies and authors' literature review.	Nurses' resilience levels were significantly lower than those of doctors and allied health staff	Sampling from a single tertiary psychiatric hospital with limited generalizability. MHNs' data were aggregated with data from other disciplines and cannot be extracted separately.	CEBMa checklist 67% Moderate quality
Dahan et al. (2022) Israel	Quantitative Cross-sectional survey, correlational	Examine negative and positive psychological effects of COVID on MHNs	183 Israeli inpatient and community MHNs	(1) 8-item self-developed questionnaire on COVID-related concerns and anxiety (Likert scale 1–5) (2) Generalized Anxiety Disorder Scale (GAD-7) (3) Hebrew 10-item Connor-Davidson Resilience Scale (CD-RISC-10) (4) 13-item National Resilience Questionnaire (5) Hebrew Post-traumatic Growth Inventory (PTGI)	MHNs' levels of concern and anxiety (during COVID) were negatively associated with personal resilience. Personal resilience were positively correlated with post-traumatic growth (in the context of COVID)	Poor response rate (23%) due to COVID wave and high work pressure Use of self-developed questionnaire for COVID-related level of concerns and anxiety	CEBMa checklist 58% Moderate quality

TABLE 2 (Continued)

Author(s) (Year) Country	Article type/ design	Aims/purpose	Participants and setting	Data collection methods	Results/conclusions	Limitations	Quality rating
Dehvan et al. (2018) Iran	Quantitative Cross-sectional, descriptive-correlational survey	Examine the relationship between MHNs' resilience and mental health	60 MHNs at Qods psychiatric hospital in Sanandaj, Iran.	(1) Demographics questionnaire (2) Persian General Health Questionnaire (GHQ-28) (3) 25-item Connor-Davidson Resilience Scale (CD-RISC)	Significant positive correlation between resilience and age, and anxiety and insomnia subscale of the GHQ-28, respectively Age, anxiety and insomnia, marital status and work shift were predictors of resilience.	Small sample size from one setting Interpretation of the data and conclusions appeared to conflict with findings	CEBMa checklist 42% Low quality
Delgado et al. (2022) Australia	Qualitative Interpretive	Explore how MHNs build and maintain resilience against high emotional labour	11 Australian inpatient and community MHNs	Individual semi-structured and audiotaped telephone interviews between 40 and 60 min	4 themes: (1) Being attuned to self and others (2) Having a positive mindset grounded in purpose (3) Maintaining psychological equilibrium through proactive self-care (4) Running on emotionally empty MHNs maintained their resilience through internal self-regulatory processes that could be hindered by a non-supportive work environment.	Highly resilient MHNs. Findings may not be transferable to other settings	JBI Qualitative checklist 80% High quality
Delgado, Roche, Fethney & Foster et al. (2020) Australia	Quantitative Cross-sectional survey	Investigate MHNs' workplace resilience in the context of emotional labour	482 MHNs across Australia	(1) Resilience at work (RAW) (2) Emotional labour Scale (ELS) (3) Demographics information	Emotional labour strategy of surface acting and intensity, and years of experience were negatively associated with workplace resilience of MHNs. Clinical supervision, emotional labour frequency and age were positively associated with resilience.	Response rate could not be calculated	CEBMa checklist 83% High quality
Delgado, Roche, Fethney & Foster et al. (2021) Australia	Quantitative Cross-sectional survey	Explore relationship between MHNs' psychological well-being, mental distress and workplace resilience	482 MHNs across Australia	(1) Demographic information (2) 18-item Ryff's Scales of Psychological Well-being (PWB18) (3) Depression, Anxiety and Stress Scale 21 (DASS21) (4) Resilience at work (RAW)	Workplace resilience was positively associated with psychological well-being and negatively associated with mental distress. Workplace resilience did not moderate the relationships between mental distress and psychological well-being.	Response rate could not be calculated	CEBMa checklist 83% High quality

(Continues)

TABLE 2 (Continued)

Author(s) (Year) Country	Article type/ design	Aims/purpose	Participants and setting	Data collection methods	Results/conclusions	Limitations	Quality rating
Doga and Boyacıoglu (2021) Turkey	Quantitative Descriptive correlational survey	Explore the relationship between MHNs' resilience and empathic tendencies	101 MHNs in a psychiatry hospital in Istanbul	(1) Personal Information Form (demographics) (2) Empathic Tendency Scale (ETS) (3) Resilience Scale for Adults (RSA)	No relationships between resilience and age, gender, work shift and education level respectively. Married MHNs had a higher resilience than single MHNs Resilience was positively associated with empathic tendency, and its social competence subscale is a predictor of empathic tendency	Sampling from a single centre. Improbable sampling method with limited generalizability.	CEBMa checklist 50% Moderate quality
Foster et al. (2020) Australia	Quantitative Cross-sectional descriptive correlational survey	Examine relationship between workplace stressors, psychological well-being, workplace resilience, and level of caring behaviours of MHNs.	498 MHNs from one state in Australia	(1) Demographic information and workplace stressors (2) 18-item Ryff's Scales of Psychological Well-being (PWB18) (3) Self-Regulatory Processes subscales of the Workplace Resilience Inventory (WRI) (4) 24-item Caring Behavior Inventory (CBI)	Workplace resilience had weak to moderate positive correlation with psychological well-being, but no relationships with caring behaviours Workplace resilience was positively associated with age and years of working in mental health.	Practice environment of MHNs (as context) not described Sample from one state in Australia, potential limited generalizability Response rate could not be calculated	CEBMa checklist 75% High quality
Henshall et al. (2020) UK	Mixed methods Intervention Quasi-experimental Pre- and post-programme survey and semi-structured interviews	Implement and evaluate a work-based personal resilience enhancement intervention for forensic nurses at an NHS Trust in the United Kingdom	29 MHNs mentees and 22 MHNs mentors from inpatient forensic wards in the United Kingdom	(1) Self-developed survey with single items on resilience, confidence, workplace satisfaction, peer support and feedbacks for the programme (2) Individual semi-structured interviews between 30 and 60 min	(1) Quantitative findings: Self-reported levels of personal resilience and self-confidence were significantly higher post-programme. There were no significant improvements to mentees' belief in their ability to provide good patient care, relationships with work colleagues and communication skills with colleagues. (2) Qualitative findings: Three categories: (a) understanding of resilience (b) content and structure of the programme (c) impact of the programme (subthemes: *key aspects of resilience*, *the importance of time out of the clinical environment* and *the role of the programme in developing new professional networks*)	Sampling in forensic setting, might not be generalizable. Use of new self-developed tools Qualitative methodology was not thoroughly described	MMAT 70% Moderate quality

TABLE 2 (Continued)

Author(s) (Year) Country	Article type/ design	Aims/purpose	Participants and setting	Data collection methods	Results/conclusions	Limitations	Quality rating
Majrabi et al. (2021) Saudi Arabia	Quantitative Cross-sectional, correlational survey	Examine relationship between burnout, safety culture and resilience in mental health nursing.	119 MHNs from one psychiatric hospital in Jazan, Saudi Arabia	(1) Demographic data (2) Maslach Burnout Inventory—HSS (MBI) (3) Safety Attitude Questionnaire (4) Connor-Davidson Resilience Scale (CD-RISC)	No correlation between resilience and burnout Strength and tenacity dimensions of resilience were a primary predictor of emotional exhaustion dimension of burnout	Sampling from a single centre. Conflicts between correlation and regression findings Response rate was not calculated	CEBMa checklist 50% Moderate quality
Ramalisa et al. (2018) South Africa	Qualitative Exploratory and descriptive	Explore how MHNs build and maintain resilience when working with involuntary consumers	24 MHNs working in a public mental healthcare facility in South Africa	Written narratives of two open-ended questions	Two themes (1) Coping mechanisms (knowledge, skills and experience; nurse–patient relationship; support system; spirituality/religion and self-care) (2) Resilience strengthening (support; trained staff; security measures and safety; teamwork)	Small sample from one setting Use of structured open-ended questionnaire	JBI Qualitative Checklist 30% Low quality
Sukut et al. (2022) Turkey	Quantitative Cross-sectional, correlational and descriptive survey	Examine MHNs' professional quality of life and psychological resilience	100 MHNs at one psychiatric hospital in Turkey	(1) Turkish Professional Quality of Life Scale (ProQOL R-IV) (2) Turkish Connor-Davidson Resilience Scale (CD-RISC)	Resilience is not associated with age, gender, role, years of experience and working shift. Resilience is negatively associated with education level and burnout. Resilience is positively associated with and is a predictor of compassion satisfaction.	Small sample from one setting	CEBMa checklist 67% Moderate quality
Xu et al. (2021) China	Quantitative Cross-sectional survey	Explore relationship between psychological resilience, experience and support of psychiatric nurses as the second victims, and their career success.	683 MHNs from five psychiatric hospitals in China	(1) Demographics (2) Chinese Career Success Scale (3) Chinese psychological resilience scale (PR) (4) Chinese second victim experience and support tool (C-SVEST)	Psychological resilience is positively correlated with MHNs' sense of career success, and second victims' experience and support. Psychological resilience also mediates the relationship between the second victim experience and support and career success	Resilience measure could not be located in the literature, unknown validity and credibility.	CEBMa checklist 50% Moderate quality
Xu et al. (2022) China	Quantitative Cross-sectional survey	Explore the relationship between impact of workplace violence, support and psychological resilience of MHNs	683 MHNs from five psychiatric hospitals in China	(1) Demographics (2) Violence-related data (injury, perception of existence of violence, type and violence-dependent influence) (3) Chinese psychological resilience scale (PR) (4) Chinese second victim experience and support tool (C-SVEST)	Psychological resilience is positively correlated with the overall second victims' experience and support score Higher psychological resilience is associated with less support MHNs receive after violence.	Resilience measure could not be located in the literature, unknown validity and credibility.	CEBMa checklist 58% Moderate quality

TABLE 3 Quality appraisal results by study design.

Study design	Author(s) (Year)	Quality appraisal tool	Quality rating
Mixed methods	Henshall et al. (2020)	MMAT	70% Moderate quality
Qualitative	Delgado et al. (2022)	JBI Qualitative Checklist	80% High quality
	Ramalisa et al. (2018)	JBI Qualitative Checklist	30% Low quality
Quantitative	Abram and Jacobowitz (2021)	CEBMa checklist	33% Low quality
	Chang et al. (2019)	CEBMa checklist	67% Moderate quality
	Dahan et al. (2022)	CEBMa checklist	58% Moderate quality
	Dehvan et al. (2018)	CEBMa checklist	42% Low quality
	Delgado et al. (2020)	CEBMa checklist	83% High quality
	Delgado et al. (2021)	CEBMa checklist	83% High quality
	Dogan and Boyacıoglu (2021)	CEBMa checklist	50% Moderate quality
	Foster et al. (2020)	CEBMa checklist	75% High quality
	Majrabi et al. (2021)	CEBMa checklist	50% Moderate quality
	Sukut et al. (2022)	CEBMa checklist	67% Moderate quality
	Xu et al. (2021)	CEBMa checklist	50% Moderate quality
	Xu et al. (2022)	CEBMa checklist	58% Moderate quality

continuing to positively develop against change' (Dogan & Boyacıoglu, 2021, p. 22).

Resilience as a dynamic process

The remaining six studies drew on recent socio-ecological theories of resilience to conceptualize resilience as a dynamic process of positive adaptation and recovery (Foster et al., 2020; Sukut et al., 2022) that involves interaction between personal, interpersonal and environmental factors (Dahan et al., 2022; Delgado et al., 2020, 2021, 2022). Four studies specifically investigated workplace resilience concepts and definitions to explain the self-regulatory processes (affective, cognitive and behavioural) MHNs use to overcome work-related challenges, and emphasized the crucial role of a supportive external environment to aid these processes (Delgado et al., 2020, 2021, 2022; Foster et al., 2020). In these studies, the notion that resilience was an outcome was challenged, and resilience as a process that results in restoration and maintenance of personal well-being, work performance and interpersonal relationships, was emphasized.

Empirical knowledge on resilience in mental health nursing

Since the original review (Foster et al., 2019), there has been an increase in descriptive and correlational quantitative studies on resilience, with 12 cross-sectional studies measuring MHNs' resilience levels and their association with several variables related to MHNs' well-being and nursing practice (see Table 2). There was one mixed methods interventional (pre- and post-test) study (Henshall et al., 2020). The qualitative phase of this mixed methods study (Henshall et al., 2020) and two other qualitative studies (Delgado et al., 2022; Ramalisa et al., 2018) described MHNs' understandings of resilience, and their experience of building and maintaining resilience in the context of workplace stress.

Experience of MHN resilience

There were several themes on resilience of MHNs identified in two qualitative studies (Delgado et al., 2022; Ramalisa et al., 2018) and the qualitative phase of the

mixed methods study (Henshall et al., 2020) with a total of $n = 59$ MHNs across all three studies. Themes related to MHNs' experience and perspectives of resilience (Henshall et al., 2020), the mechanisms which MHNs used to build and maintain their resilience to in the context of workplace stress (Delgado et al., 2022; Ramalisa et al., 2018), barriers to the resilience process (Delgado et al., 2022) and strategies to strengthen resilience (Henshall et al., 2020; Ramalisa et al., 2018). There was, however, a lack of rigour in reporting in the Ramalisa et al. (2018) study, the quality of which was rated low, and a lack of adequate representation of participants' voices and lack of depth in data analysis and interpretation in the article. As a result, findings from Delgado et al. (2022) and Henshall et al. (2020) were the major contributors to understandings on MHNs' experience of resilience in this review.

In two studies, MHNs described resilience as a dynamic personal quality that centred around self-awareness, communication and work–life balance—'the ability to calm yourself down… take care of yourself… manage difficult situations' (Henshall et al., 2020, p. 515), or as a process of maintaining intra- and interpersonal boundaries to keep a balance between self-care and care for others, to 'set fairly firm boundaries… and recognize when you need to look after you… it's not the ability just to be enduring, like a soldier' (Delgado et al., 2022, p. 11). MHNs consciously engaged in an iterative internal self-regulatory process of reflection and being aware about the emotional and mental experience of themselves and those around and drew on available internal and external resources for support (Delgado et al., 2022). Internal resources involved having a professional sense of purpose (Delgado et al., 2022), a focus on the meaning of the work (Delgado et al., 2022; Ramalisa et al., 2018) and a positive mindset (Delgado et al., 2022). External resources included organizational supports (Delgado et al., 2022), protective time-out of clinical work for self-reflection (Henshall et al., 2020) and having a social support system in the workplace and at home (Delgado et al., 2022; Henshall et al., 2020). Self-care strategies were grouped into four categories: cognitive (e.g. cognitive reframing; Delgado et al., 2022), emotional (professional counselling; Delgado et al., 2022), relational (seeking help from work colleagues; Delgado et al., 2022; Ramalisa et al., 2018) and behavioural (participating in professional development; Delgado et al., 2022; Ramalisa et al., 2018).

Organizational supports were suggested in all studies to be crucial in strengthening MHNs' resilience. For MHNs, it was important 'to have management that is understanding and supportive' (Ramalisa et al., 2018, p. 5). The types of support comprised security measures for personal safety and well-being (Delgado et al., 2022; Ramalisa et al., 2018), forming professional networks with other staff and senior mentors (Henshall et al., 2020), adequate staffing levels (Delgado et al., 2022; Ramalisa et al., 2018) and reasonable workloads (Delgado et al., 2022). In addition, the opportunity for professional development and growth was fundamental to resilience-building: 'it wasn't until I started getting [clinical] supervision that made me feel I am becoming more resilient … I've also tried to do a few different roles … and I think that's helped me build resilience as well' (Delgado et al., 2022, p. 10).

The lack of organizational supports and excessive workplace stressors and demands were identified as barriers to MHNs' resilience. In the absence of supports and having to rely solely on personal resources, MHNs' capacity to maintain self-awareness and reflection were impaired, so they prioritized care provision over own well-being, self-care and safety (Delgado et al., 2022). In one study, when a resilience-building programme was offered, some participants were initially reluctant to engage and misunderstood the programme purpose as disciplinary action related to poor work performance instead of seeing it as support from organization: 'I thought I was put on the Resilience Course because my manager didn't think I was resilient enough and that it was a shortfall in my performance'. (Henshall et al., 2020, p. 515). The lack of support and appreciation from workplaces could also create a negative workplace culture where MHNs felt discouraged to speak up or take meaningful actions: 'the problem is that people say "Well, there's no point in saying anything… let's not complain", and that does not help people…' (Delgado et al., 2022, p. 11).

Measurement of MHN resilience

Resilience was measured across 13 studies (12 quantitative cross-sectional and one interventional) using nine different tools (see Table 2). Only six out of 15 studies used resilience measures that were theoretically consistent with the authors' conceptualisations of the resilience construct (Dehvan et al., 2018; Delgado et al., 2020, 2021; Foster et al., 2020; Majrabi et al., 2021; Sukut et al., 2022). Across the studies, MHNs' resilience levels were reported as moderate to high. It should be noted that many of the tools used to measure resilience, such as the Connor-Davidson Resilience Scale, do not classify scores into categories (e.g. low, moderate or high). Authors commonly did not provide a specific rationale for their categorization and interpretations of the resilience score when interpreting MHNs' resilience levels. One study measured the resilience of $n = 462$ mental health professionals (doctors, nurses and allied health) using the 6-item Brief Resilience Scale (BRS) (Smith et al., 2008) and found that the resilience scores of MHNs (BRS = 3.46, $n = 201$) were within the 'normal' or moderate category (between 3.0 and 4.30) but significantly lower than those of doctors ($p = 0.001$) and allied health staff ($p = 0.009$;

Chang et al., 2019). Dogan and Boyacıoglu (2021) used the Turkish version of the 33-item Resilience Scale for Adults (RSA) (Friborg et al., 2006) and found that 64% of MHNs scored above average (RSA = 126.84, n = 101). Abram and Jacobowitz (2021) used the shorter 14-item version of the Resilience Scale (Wagnild, 2009) to show that their inpatient MHNs had high levels of resilience (Resilience Scale = 85.7, n = 51).

Three studies used the 25-item Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003) (Dehvan et al., 2018; Majrabi et al., 2021; Sukut et al., 2022), and one used the 10-item abridged version of the scale (CD-RISC-10; Campbell-Sills & Stein, 2007) (Dahan et al., 2022). Two of these measured MHNs' resilience levels as moderate (CD-RISC = 67.33, n = 100 Turkish MHNs; Sukut et al., 2022) or high (CD-RISC-10 = 3.09, n = 183 Israeli MHNs; Dahan et al., 2022). Dehvan et al. (2018) concluded that their sample of n = 60 Irani MHNs participated in the study were 'resilient' (CD-RISC = 63.9). One study reported the resilience levels of n = 219 MHNs in Saudi Arabia according to three factors of the CD-RISC Scale: tenacity (mean = 29.21), strength (mean = 16.84) and optimism (mean = 7.35), rather than the overall CD-RISC mean (Majrabi et al., 2021).

Only a few articles used process-based measures of workplace resilience. Two articles used the 25-item Resilience at Work (RAW) Scale (Winwood et al., 2013) to measure resilience in the same sample of n = 482 Australian MHNs (Delgado et al., 2020, 2021). More than half of the participants (n = 258) had above average resilience scores (RAW = 70.27) and exhibited higher levels of resilience (Delgado et al., 2020, 2021). The remaining study also used a workplace resilience measure—23 items from the Self-Regulatory Processes subscales of the Workplace Resilience Inventory (WRI; McLarnon & Rothstein, 2013) and found that n = 498 Australian MHNs reported a moderate level of workplace resilience (WRI = 3.1–3.3 out of 5) (Foster et al., 2020).

Henshall et al. (2020) did not measure resilience using a validated instrument but asked n = 29 MHNs to rate their level of resilience used a self-developed single item following a resilience-enhancing intervention. As this was a new and self-developed item, it is difficult to draw any conclusions or comparisons about the resilience levels of these MHNs to those in other studies. Two studies used the Chinese version of a psychiatric resilience scale of nurses compiled by Lin et al. (2020) in the same sample of n = 683 Chinese MHNs (Xu et al., 2021, 2022). The mean resilience score was 89.09 and no interpretation was provided. The review authors were unable to contact Xu et al. (2021) and Xu et al. (2022) for clarification and were unable to locate Lin et al. (2020)'s tool to assess its validity. As a result, their findings on MHN resilience should be viewed as indicative only.

Factors associated with MHN resilience

Twelve cross-sectional studies investigated the association between resilience and several constructs related to MHNs' well-being and nursing practice. Four of those investigated the correlations between resilience and MHNs' psychological well-being (r = 0.571; Delgado et al., 2021; r = 0.306–0.549; Foster et al., 2020), post-traumatic growth (r_s = 0.24; Dahan et al., 2022), depression (r = −0.506; Delgado et al., 2021), anxiety (r = −0.321, Delgado et al., 2021) and stress (r = −0.46, Delgado et al., 2021). Delgado et al. (2021) also showed that despite the association between resilience and psychological well-being and mental distress, resilience did not moderate the relationships between mental distress and psychological well-being. One study assessed MHNs' levels of anxiety and concern in relation to the COVID-19 pandemic and concluded that higher levels of personal resilience were associated with lower levels of COVID-related anxiety (r_s = −0.24) and concern (r_s = −0.17; Dahan et al., 2022). Most notably, Dehvan et al. (2018) reported a significant positive correlation between MHNs' resilience and the *anxiety and insomnia* subscale (β = 1.029) of the General Health Questionnaire-28.

Nursing practice-related factors associated with resilience included burnout (r_s = −0.39; Abram & Jacobowitz, 2021; r = −0.247; Sukut et al., 2022), compassion satisfaction (r = 0.424; Sukut et al., 2022) and empathic tendency (r_s = 0.371; Dogan & Boyacıoglu, 2021). Resilience was also associated with emotional labour of MHNs' work (Delgado et al., 2020). Specifically, resilience was negatively associated with *Surface Acting* (η^2 = 0.14) and *Intensity* (η^2 = 0.03) subscales, and positively associated with *Frequency* (η^2 = 0.04) subscale of the *Emotional Labour Scale*. There was no relationship between resilience and MHNs' caring behaviours (r = −0.057 to r = 0.144; Foster et al., 2020) or compassion fatigue (r = −0.001; Sukut et al., 2022).

Unlike other studies, Majrabi et al. (2021) did not report the overall CD-RISC score or total burnout score. They instead analysed the three resilience factors of the CD-RISC Scale (*strength*, *tenacity* and *optimism*) against the three burnout factors of the Maslach Burnout Inventory (*emotional exhaustion*, *depersonalization* and *personal accomplishment*). Further, their correlation analysis showed no significant correlations between the three factors of resilience and the three factors of burnout, yet their linear regression analysis indicated that *strength* (β = −0.21, p < 0.01) and *tenacity* (β = −0.11, p < 0.01) were predictors of *emotional exhaustion*. The authors did not discuss the conflict between correlation findings and regression analysis.

Xu et al. (2021) showed that MHNs' psychological resilience was positively associated with their sense of career success (r = 0.785, Xu et al., 2021). Xu et al. (2022) investigated the relationship between MHNs' psychological resilience and the Chinese Second Victim Experience

and Support Tool (which measured the levels of harm to MHNs' well-being and practice capacity, and the levels of support they receive, following unexpected workplace adverse events such as occupational violence) and found a positive relationship between them (r = 0.24). As mentioned above, since the Chinese version of the psychiatric resilience scale of nurses used by these studies could not be located for verification, these results should be interpreted with caution.

Resilience-strengthening intervention

Only one study reported a resilience intervention programme for MHNs since the original review (Henshall et al., 2020). This pilot study used a quasi-experimental mixed methods pre- and post- design with 29 mentees and 22 mentors. The intervention programme aims were 'building hardiness, maintaining a positive outlook, achieving work-life balance, reflective and critical thinking, and enabling spirituality' (Henshall et al., 2020, p. 510). Mentorship was a major element of the intervention, and each participant was assigned a mentor (Henshall et al., 2020). Data were collected using pre- and post-intervention surveys at two time points (at the start of the programme and after the final programme session), and post-intervention semi-structured interviews. Mentees' self-reported levels of personal resilience and self-confidence were significantly higher (p = 0.0004 and p = 0.003 respectively) following participation in the programme. They also became aware of their resilience and were 'able to think more about how to become more resilient' (Henshall et al., 2020, p. 515). There was perceived improvement to professional relationships, and participants appreciated the opportunity to socialize with MHNs from other work areas. However, the study did not report precisely when post-intervention data collection occurred after programme completion, and as there was no further follow-ups, the long-term effects of the intervention is unknown. Interestingly, while qualitative findings in the study indicated that the mentor–mentee relationship was positive, there were no significant differences to participants' self-rated communication skills and relationship with work colleagues pre- and post-programme (Henshall et al., 2020). In addition, resilience was measured using a single item asking participants to rate their 'levels of personal resilience' (Henshall et al., 2020, p. 512). It was unclear if a resilience definition was provided with the pre-programme survey, and whether that could have a confounding effect on the self-reported level of resilience pre- and post-programme.

DISCUSSION

In this review, we have provided an update on empirical evidence in the field of resilience research in mental health nursing and synthesized recent understandings and perspectives on resilience in the field since the original review (Foster et al., 2019). Despite the increasing number of investigations of MHN resilience across cultures, conceptualizations of resilience remain inconsistent, as previously observed by Foster et al. (2019). Many studies continue to draw on outdated earlier concepts of resilience. For instance, nine out of 15 studies (compared with half of the 12 studies in the original review) conceptualized resilience as an individual trait, ability or capacity. Further, a few studies used poorly validated and unreliable measures (e.g. single item measure of resilience; Henshall et al., 2020) or measures that are not theoretically consistent with the authors' conceptualizations of the construct (e.g. Chang et al., 2019), and only three studies used process-based measures of workplace resilience. Foster et al. (2019) suggested that a lack of conceptual clarity on resilience and variation in resilience measuring tools might create inconsistencies and hinder progressive development of the evidence base of the field. They recommended that process-based resilience measures that include individual and external resources should be used. The findings from this update reinforce the need for clear and concise conceptualizations that are consistent with those of leading experts in resilience theory and research (e.g. see discussions from Southwick et al., 2014, and Vella & Pai, 2019), the need to specifically define mental health nurse resilience rather than using existing broad definitions, the use of only one definition of resilience rather than multiple competing definitions and the use of process-based resilience measures. Resilience research focussing solely on personal resilience factors have limited contributions to understandings of resilience as a multi-systemic construct (Connor & Davidson, 2003) and remove responsibility from organizations and management to provide external support and resources that promote staff well-being and resilience (Foster et al., 2019).

Interestingly, MHNs' resilience levels across the included studies were moderate to high, as compared to low to moderate in the original review by Foster et al. (2019). Variation in measurement tools and the sociocultural contexts where the tools were used might explain the differences in MHN resilience between studies reported in the original review and this update. For example, more than half (n = 9) of the included studies in this review (compared to only a third of the studies from the original review) were conducted in the Middle East, South Africa and Asia.

Similar to Foster et al. (2019)'s findings, the recent research has continued to focus on associations between MHN resilience and different aspects of their well-being and nursing practice (e.g. psychological well-being, mental distress, post-traumatic growth, compassion satisfaction, empathy, emotional labour and burnout). We found limited empirical evidence on the efficacy of resilience programmes and strategies

to improve MHN resilience in workplace context, with only one new pilot study conducted (Henshall et al., 2020). In addition, despite the ongoing impacts of the COVID-19 pandemic on MHNs' well-being and workforce retention (Lopez et al., 2022), only one study investigated the effect of the pandemic on MHN resilience and their psychological well-being, and none has yet been published that has explored how MHNs built and maintained their resilience against COVID-related challenges and the sustainability of these strategies. These are important areas of research that warrant further investigation.

An important new finding that was distinct from the original review was the impact of high occupational demands and lack of organizational supports on MHN resilience. In these situations, MHNs' ability to manage their emotional and mental states through affective, cognitive and behavioural self-regulatory processes may be impaired. They can struggle to maintain the boundaries that separated their personal and professional selves and, as a result, compromise their well-being and safety in exchange for task completion at work. In some instances, MHNs might normalize a prolonged absence of support as an inevitable part of their work and no longer feel encouraged to access external resources to cope with workplace stress (Delgado et al., 2022). Subsequently, they might be reluctant to get involved with prospective workplace stress management interventions or strategies (Henshall et al., 2020). These findings are consistent with other literature that indicated MHNs often under-utilize organizational resources during crises because they perceived risks and challenges (e.g. workplace violence) as part of the job (Fahy & Moran, 2018). Further investigation is needed to explore further the impacts of lack of organizational resources and negative organizational cultures on MHNs' well-being, nursing practice and support uptake.

In this review, we identified evidence of poor methodology and lack of scientific rigour in several studies, most notably related to analysis and interpretations of data (Ramalisa et al., 2018), scant descriptions of sampling (Abram & Jacobowitz, 2021), use of newly self-developed measures (Henshall et al., 2020), use of non-verifiable measures (Xu et al., 2021, 2022) and inconsistency between results and interpretations (Dehvan et al., 2018; Majrabi et al., 2021). The reason for the greater variation in methodological quality since Foster et al. (2019) review is unclear. It is important that MHN researchers design, conduct and report rigorous research in order to advance knowledge in the field. The use of EQUATOR and other reporting guidelines may help researchers to improve the reporting of future research.

Strengths and limitations

A strength of this review is the use of rigorous replicable processes, similar to those employed by Foster et al. (2019) in the original review, and that comparisons could be made to their findings. Other strengths include the use of validated critical appraisal tools to assess and critique the quality of included studies, and the inclusion of all studies with various methodological quality to allow recommendations about the scientific rigour of future research. The inclusion of literature in the English language only might exclude relevant studies in other languages.

CONCLUSION

This review has synthesized empirical research between 2018 and 2022 and provided updated evidence on resilience in mental health nursing. The synthesized findings have been compared with those from the original review and extend the growing evidence base in the field. There has been a gradual shift of focus in research from individual resilience to resilience as a complex multidimensional construct, and a growing recognition on the benefits of resilience to MHNs' psychological well-being and nursing practice. Insufficient organizational and managerial supports may greatly impair MHNs' capacities to maintain self-care and providing care for others. Validity and reliability of research evidence remains a concern and future studies should aim to focus on methodological quality to produce high quality evidence.

RELEVANCE FOR CLINICAL PRACTICE

Further research is needed to build and consolidate the evidence base that drives changes to guidelines and policies to protect MHNs' well-being and workforce sustainability. Organizations, government and the mental health nursing profession are accountable for promoting MHNs' voice and encouraging them to speak up or ask for help. These professional bodies must also provide MHNs with adequate supports so that they can build and maintain their resilience to stay healthy and be able to deliver good clinical care in a safe environment.

AUTHOR CONTRIBUTIONS

KF, MVB and EM contributed to the conception and/or design of the study. All authors contributed to data collection and analysis. MVB drafted the manuscript and all authors contributed to refining and/or critically reviewing the manuscript. All authors are in agreement with the manuscript.

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CONFLICT OF INTEREST STATEMENT

Kim Foster is an Editor of the International Journal of Mental Health Nursing.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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2.3. Update to the Published Literature Review – 2024

The integrative review above provided an update on empirical evidence of resilience in the field of mental health nursing and was published in early 2023 (Bui et al., 2023b). Since the literature search for the review ended in July 2022, there has been a further increase in research on resilience in mental health nursing. Given the two-year timeframe since the search ended, an update of the most contemporary evidence was relevant for the thesis. The purpose was to extend on the original review findings and explore whether there was any new evidence to add to understandings of resilience research in the field. The aims, research questions, and review methodology remained relevant and were replicated from the review (Bui et al., 2023b), as presented below.

2.3.1 Updated Review Methods

2.3.1.1 | Aims and Research Questions. The aims remained the same as those in the published review (Bui et al., 2023b), which were: i) to examine and update understandings and perspectives on resilience in mental health nursing research, and ii) to explore and synthesise the state of empirical knowledge on resilience in mental health nursing. Similarly, the two research questions were:

i) What are the concepts of resilience in the mental health nursing literature?

ii) What is the state of empirical knowledge on mental health nurses' resilience?

2.3.1.2 | Design. Consistent with the published review, the 5-stage integrative review methodology by Whittemore and Knafl (2005) was used to guide the conduct of this updated review.

2.3.1.3 | Inclusion and Exclusion Criteria. The inclusion and exclusion criteria were retained from the published integrative review, with the exception that only research articles

published between July 2022 to June 2024 (i.e., between the last search and currently) were included in this updated review.

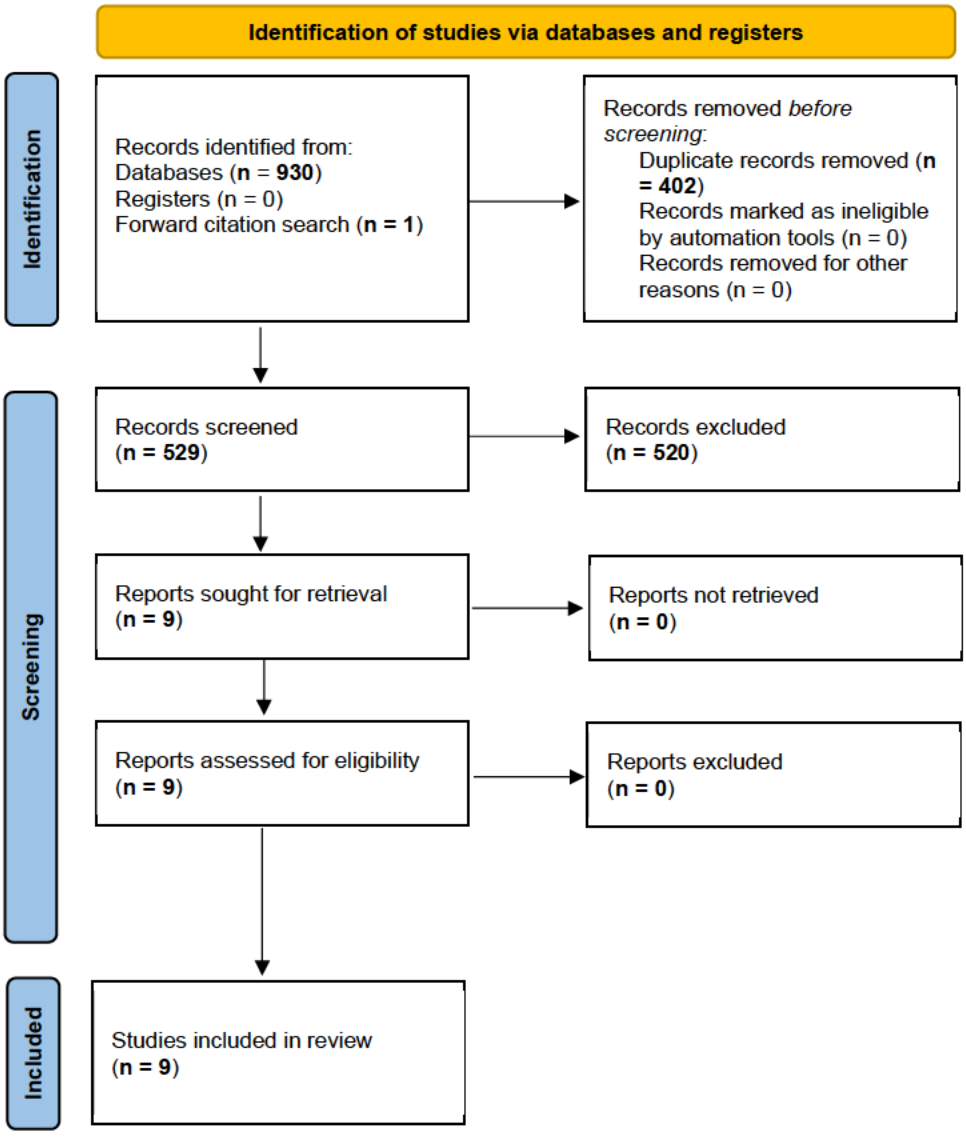
2.3.1.4 | Data Search and Sources. The search terms were the same as the published review and were used to find relevant articles from CINAHL Complete, MEDLINE Complete, and PsycINFO databases. Hand searching was also performed to identify relevant studies that might not be picked up by electronic database search. Hand searching involved backward citation searching, i.e., search of the cited references in relevant articles, and forward citation searching, i.e., search for published articles that cited Bui et al.'s (2023b) and Foster et al.'s (2019) reviews.

Table 2.1: Search Terms

Content area	Boolean methods	Subject heading	Search terms
Nursing	OR	Mental health nurse	Psychiatric nurs*
		Psychiatric nursing	Mental health nurs*
	AND		
		Adaptation, Psychological	resilien*
		Coping	adapt*
		Psychological Well-Being	coping
		Resilience, psychological	withstand*
		Emotional Adjustment	adjust*
		Hardiness	resist*
Resilience	OR		wellbeing
			well-being
			overcome*
			psycholog*
			behav*
			respon*
			emotion*

2.3.1.5 | Screening and Sifting. A total of 931 records were retrieved from the three databases and hand searching, and imported into Covidence Systematic Review Software (2022) for screening. A total of 402 duplicates were removed. The titles and abstracts of 529 articles were screened. Nine of those were included in full-text review and assessed according to the inclusion/exclusion criteria for relevance. All were retained for extraction (see Figure 2.1).

Figure 2.1: PRISMA Flow Chart for Literature Review Update



2.3.1.6 | Quality Appraisal. Quantitative cross-sectional studies were assessed using the Critical Appraisal of a Cross-Sectional Study (Survey) tool (CEBMa; Center for Evidence Based Management, 2014). Qualitative studies were assessed using the Joanna Briggs Institute (2020a) Checklist for Qualitative Research. One pilot randomised controlled trial paper was assessed using the Joanna Briggs Institute (2020b) Checklist for Randomised Controlled Trials. A summary of critical appraisal outcomes is provided in Table 2.2.

Table 2.2: Quality Appraisal Results by Study Design

Study design	Author(s) (Year)	Quality appraisal tool	Quality rating
Randomised controlled trial	Henshall et al. (2023)	JBI checklist for RCT	87.5% High quality
Qualitative	Bui et al. (2023a)	JBI Qualitative Checklist	80% High quality
	Foster et al. (2023)	JBI Qualitative Checklist	80% High quality
Quantitative	Alenezi (2024)	CEBMa checklist	83% High quality
	Alonazi et al. (2023)	CEBMa checklist	83% High quality
	Chen et al. (2022)	CEBMa checklist	91% High quality
	Foster, Shakespeare-Finch, et al. (2024)	CEBMa checklist	83% High quality
	Foster, Steele, et al. (2024)	CEBMa checklist	83% High quality
	Hasan and Alsulami (2024)	CEBMa checklist	83% High quality

2.3.1.7 | Data Analysis. Consistent with the published review, data relevant to each review question were extracted from the papers and entered into a data matrix spreadsheet. The constant comparison approach (Whittemore & Knafl, 2005) was used to identify patterns

and relationships in the data, and to compare and contrast data across studies. The findings were narratively synthesised and reported against the two original research questions.

2.3.2 Results

2.3.2.1 | Description of Studies. Nine empirical articles (Table 2.3) were retrieved from 529 screened records. Six articles were cross-sectional surveys, two were qualitative, and one was a pilot randomised controlled trial. Studies were primarily from Saudi Arabia (n = 3) and Australia (n = 4). The remaining two were from China (n = 1) and the United Kingdom (n = 1). All studies included only mental health nurse participants. One of these nine studies was written by this thesis' author (Bui et al., 2023a) and the findings of that study is presented in Chapter 7. In contrast to the published original review, where only four studies were rated as high quality, all the included studies were rated as high quality.

Data collection of the studies occurred in 2020 (Chen et al., 2022; Foster et al., 2023), between 2021 and 2022 (Henshall et al., 2023), in 2022 (Alonazi et al., 2023; Bui et al., 2023a; Foster, Shakespeare-Finch, et al., 2024; Foster, Steele, et al., 2024), or in 2023 (Alenezi, 2024). Hasan and Alsulami (2024) did not identify when their data were collected. Three studies explicitly mentioned that the research was conducted during COVID-19 (Chen et al., 2022; Foster, Steele, et al., 2024; Henshall et al., 2023). Two studies specifically examined the impact of COVID-19 on MHNs' resilience (Bui et al., 2023a; Foster, Shakespeare-Finch, et al., 2024).

Table 2.3: Summary of Included Studies

Author(s) (Year) Country	Paper type/design	Aims/purpose	Participants and setting	Data collection methods	Results/Conclusions	Limitations	Quality rating
Alenezi (2024) Saudi Arabia	Quantitative cross-sectional survey, correlational	Examine the impact of resilience on workplace violence experienced by MHNs.	361 MHNs	1) Resilience at work (RAW) 2) Workplace violence questionnaire	48.8% of the studied nurses had a high level of resilience (RAW score 63 – 85) and 50.4% had a moderate level of resilience (RAW score 40 – 62). Resilience was found to be a predictor to exposure to workplace violence (odd ratio was 0.92).	May lack generalisability due to homogeneity of the sample. Convenience sampling might introduce bias	CEBMa checklist 83% High quality
Alonazi et al. (2023) Saudi Arabia	Quantitative cross-sectional survey, correlational	Examine the relationship between psychological resilience & ProQOL among MHNs in the Eastern Region of Saudi Arabia.	179 MHNs	1) Arabic 25-item Connor-Davidson Resilience Scale (CD-RISC) 2) Professional Quality of Life (ProQOL) Scale	Mean resilience score (CD-RISC) = 94.6/100. Higher resilience was associated with greater compassion satisfaction (r = 0.632), less burnout (r = -0.47) and fewer secondary traumatic stress symptoms (r = -0.21).	Cross-sectional design restricts conclusions about causality or changes over time. Limited generalisability (conducted in a single centre in Saudi Arabia)	CEBMa checklist 83% High quality

Bui et al. (2023a) Australia	Qualitative Interpretive	Explore the experience and impacts of COVID-19 on the resilience of MHNs.	20 Australia inpatient and community MHNs	Individual semi-structured and audiotaped telephone interviews between 21-54 mins	4 themes: 1) Experiencing significant disruptions 2) Making sense of shared chaos 3) Having professional commitment 4) Growing through the challenges MHNs maintained their resilience in practice and grew through COVID-19 using internal self-regulatory processes and external resources.		JBI qualitative checklist 80% High quality
Chen et al. (2022) China	Quantitative cross-sectional survey, correlational	Investigate MHNs' mental health level & whether resilience plays a mediating or moderating role between occupational	450 MHNs in five hospitals in Jiangsu Province, China	1) Demographics questionnaire 2) Chinese Nurses' Stress Scale (CNSS) 3) Chinese 25-item Connor-Davidson	Mean resilience score (CD-RISC) = 79.35/100. Resilience was negatively correlated with occupational stress (r = -0.331) and psychopathological symptom (r = -0.448), and was	Cross-sectional design and unable to determine causal relationship. Study conducted during COVID-	CEBMa checklist 91% High quality

		stress & mental health.		Resilience Scale (CD-RISC) 4) Chinese Warwick-Edinburgh Mental Well-being Scale 5) Chinese 12-item General Health Questionnaire (GHQ-12)	positively correlated with positive wellbeing (r = 0.786) Occupational stress can indirectly affect mental health through psychological resilience (i.e., mediating relationship). Resilience does not mitigate (i.e., moderate) the effects of occupational stress on mental health.	19, may cause higher occupational stress and lower mental health for MHNs.	
Foster et al. (2023) Australia	Qualitative interpretive narrative inquiry	Explore MHNs' stories of resilience in practice to gain an understanding of the resilience resources MHNs draw on when dealing with challenging workplace	12 Australian MHNs	Individual semi-structured and audiotaped telephone interviews between 30-60 min, with an average of 45 min	4 themes: 1) Managing the professional self proactively 2) Sustaining oneself through supportive relationships 3) Engaging actively in practice, learning and self-care 4) Seeking positive solutions and outcomes In emotionally challenging and demanding situations,		JBI qualitative checklist 80% High quality

		interactions & situations.			MHNs showed grace under pressure, maintained dignity and respect for themselves and for other people to achieve positive consumer and own outcomes.		
Foster, Shakespeare-Finch, et al. (2024) Australia	Quantitative, cross-sectional, descriptive, correlational	Explore the psychological distress, wellbeing, emotional intelligence, coping self-efficacy, resilience, posttraumatic growth, sense of workplace belonging, & turnover intention of Australian MHNs.	144 Australian MHNs	1) Demographics 2) 10-item Kessler Psychological Distress Scale (K10) 3) 14-item short form of the Mental Health Continuum (MHC-SF 4) 14-item Genos Emotional Intelligence Inventory – Short (GENOS-EI) 5) 13-item Coping Self-Efficacy scale (Short; CSES)	Mean resilience score (BRS) = 3.45/5, which indicates moderate resilience. Resilience was positively associated with wellbeing (r = 0.4, P < 0.001), emotional intelligence (r = 0.42, P < 0.001), coping self-efficacy (r = 0.49, P < 0.001), and workplace belonging (r = 0.33, P < 0.001). Resilience was negatively associated with psychological distress (r = –0.38, P < 0.001) and turnover intention (r = –0.21, P = 0.012).	Participants from a single centre, might not be generalizable to other settings	CEBMa checklist 83% High quality

				6) 6-item Brief Resilience Scale (BRS) 7) 21-item Posttraumatic Growth Inventory (PTGI) 8) 6 items from the Psychological Sense of Organisational Membership Scale (PSOM) 9) 4-item Turnover Intention Scale (TIS)	There was no significant association between resilience and posttraumatic growth (PTG).		
Foster, Steele, et al. (2024) Australia	Quantitative, cross-sectional, descriptive, correlational	Describe demographic characteristics, perceived stress, wellbeing, resilience, mental illness stigma attitudes,	87 Australian MHNs	1) Demographics 2) World Health Organization – Five Well-Being Index (WHO–5) 3) Brief Resilience Scale (BRS)	Mean resilience scores (BRS) for the four cohorts range between 3.4 and 3.8/5 (i.e., moderate level of resilience) Higher resilience was weakly associated with higher work satisfaction (r = 0.26), but	Relatively small sample from a single centre, might not be generalizable to other settings.	CEBMa checklist 83% High quality

		work satisfaction, and turnover intention of four nurse cohorts (generalist RN, graduate RN, postgraduate RN, and EN) entering mental health transition programs.		4) 4-item Turnover Intention Scale (TIS) 5) Opening Minds Scale for Health Care Providers (OMS-HC) 6) Perceived Stress Scale (PSS-10) 7) Single item on work satisfaction	moderately associated with higher wellbeing (r = 0.4) and older age (r = 0.3) Higher resilience was also moderately associated with lower stigma (r = –0.3) and strongly associated with perceived stress (r = –0.65)	COVID-19 might have affected nurses' willingness to participate.	
Hasan and Alsulami (2024) Saudi Arabia	Quantitative cross-sectional survey, correlational	Assess the relationships between psychological wellbeing, mental distress & resilience among MHNs. Identify the significant predictors of the psychologic	250 MHNs at Erada Complex For Mental health Hospital (Saudi Arabia)	1) Demographics 2) 18-item Ryff's Scales of Psychological Well-Being 3) Depression, Anxiety, and Stress Scale (DASS-21) 4) 25-item Connor-Davidson	Mean resilience score (CD-RISC) = 63.31/100. Moderate (r = 0.31 to r = 0.67) positive relationship between all dimensions of resilience & psychological wellbeing except for psychological wellbeing dimension of environmental mastery with resilience dimensions of trust (r = –0.41)	Study conducted at one site, might not be generalizable to other settings.	CEBMa checklist 83% High quality

		wellbeing of MHNs.		Resilience Scale (CD-RISC)	& positive acceptance (r = – 0.37)		
Henshall et al. (2023) UK	Pilot randomised controlled trial	Examine participants' engagement with a newly developed Resilience Enhancement Online Training for Nurses (REsOluTioN) to explore its acceptability, compare levels of resilience & psychological wellbeing in MHNs who completed REsOluTioN with those who did not.	107 MHNs in NHS trust in South of England	1) Participant engagement 2) Acceptability of the REsOluTioN program 3) Brief Resilience Scale 4) Warwick-Edinburgh Mental Wellbeing Scale	Mean resilience score (BRS) = 3.02/5 for all MHNs at baseline and 6 weeks post-program. No statistically significant differences between intervention and control groups at both baseline and 6 weeks post-program	Study conducted at a single site, might not be generalizable to other settings. Study conducted during COVID-19 which may have influenced the findings due to MHNs experiencing high pressure.	JBI checklist for RCT 87.5% High quality

2.3.2.2 | Theoretical Concepts of Resilience. Across the studies, resilience conceptualisations varied between *an ability* or *a process*. In five studies, resilience was consistently defined in the workplace context as an active, dynamic process of positive adaptation against adversity, where personal protective characteristics (e.g., use of cognitive, behavioural and emotional self-regulation) and external resources are utilised to help restore individuals' wellbeing and work performance (Bui et al., 2023a; Foster et al., 2023; Foster, Shakespeare-Finch, et al., 2024; Foster, Steele, et al., 2024; Hasan & Alsulami, 2024). This conceptualisation is consistent with contemporary resilience research theory (Vella & Pai, 2019). In three studies, resilience was conceptualised as an ability. Henshall et al. (2023) defined resilience as an individual's ability to maintain equilibrium and adjust positively to adversity. The authors also acknowledged that resilience was a dynamic (rather than static) construct. Similarly, Alonazi et al. (2023) referred to resilience as nurses' ability to adapt to workplace stress, and that resilience was associated with self-efficacy, coping, and neuroticism (i.e., a tendency to frequently and intensely experience prolonged negative emotions like anxiety, guilt, anger, and depression) (Rees et al., 2015). Chen et al. (2022) conceptualised resilience as the ability to adapt to stress or challenges, with a focus on positive attitudes and strengths. Lastly, Alenezi (2024) did not explicitly define resilience but stated that the characteristics of resilience included self-awareness, insight, hope, faith, and self-care.

2.3.2.3 | Empirical Knowledge on Resilience in Mental Health Nursing. Following the trend observed in the published review, the majority of studies (n = 6; Table 2.3) were cross-sectional and correlational, investigating MHNs' resilience levels and how resilience was associated with variables indicative of MHNs' wellbeing and practice. There were only two further qualitative studies which examined how MHNs built and maintained their resilience against workplace adversities (Bui et al., 2023a; Foster et al., 2023). In a pilot

randomised controlled trial, Henshall et al. (2023) investigated how a resilience intervention could improve nurses' resilience in the workplace.

2.3.2.3.a | Experience of MHN resilience. In two qualitative studies with a total of n = 32 Australian MHNs, there were several themes related to MHNs' perspectives and experience of drawing on resilience resources to build and maintain their resilience against workplace challenges (Foster et al., 2023), including during COVID-19 (Bui et al., 2023a). MHNs coped with workplace challenges (e.g., the unprecedented demands and pressure from higher consumer acuity during COVID-19) by proactively managing their thoughts, emotions, and behaviours using a range of cognitive, emotional, and behavioural strategies. These strategies included finding the positives in the situation (Bui et al., 2023a; Foster et al., 2023), being courageous to face challenges head-on (Foster et al., 2023), being self-aware of their emotions and thoughts to avoid taking things personally when working with consumers who were upset or in distress (Bui et al., 2023a; Foster et al., 2023), and having self-compassion (Bui et al., 2023a).

Mental health nurses in both studies acknowledged that to maintain their resilience in practice, it was crucial for them to look after their own physical, mental, and emotional wellbeing through personal and professional self-care (Bui et al., 2023a; Foster et al., 2023). Personal self-care included engaging in personal hobbies and having time for themselves outside of work (Bui et al., 2023a), maintaining work/life balance by leaving work at work (Foster et al., 2023), and taking mental health days off (Foster et al., 2023). Professional self-care often included those provided by their organisations, such as peer or clinical supervision, and employee assistance programs (Bui et al., 2023a; Foster et al., 2023). Additionally, during COVID-19 when several self-care activities (e.g., social gatherings or clinical supervision) were no longer available or limited (i.e., due to social distancing measures),

nurses had an even greater appreciation for self-care and went to greater lengths to develop new ways to do self-care (e.g., having virtual connections with colleagues) in this socially-constrained context (Bui et al., 2023a). This finding on nurses' efforts to practice self-care despite the barriers of COVID-19 extends findings from the original review, and showed that nurses recognised the crucial role of prioritising their wellbeing to maintain resilience in their practice (Bui et al., 2023b).

Further, MHNs understood that it was important to have supportive relationships. This included seeking and connecting with trusted colleagues and mentors at work to informally debrief and problem-solve (Foster et al., 2023). For instance, in the process of confiding in their colleagues about personal struggles with the COVID-19 pandemic, many nurses found solace in learning that everyone was facing similar problems, which brought them closer together and forged stronger social bonds (Bui et al., 2023a). This empathic connection with their colleagues, in turn, inspired them to offer encouragement and guidance to others, including less experienced nurses (Bui et al., 2023a; Foster et al., 2023). Outside of work, nurses reported finding it helpful to debrief with family and friends for emotional support regarding difficult work-related events (Foster et al., 2023). Some nurses also connected socially with their work colleagues (Bui et al., 2023a).

Professionalism was another key factor in MHNs' self-regulatory process and in maintaining their resilience in practice. This factor was not reported in qualitative studies from the original review (Bui et al., 2023b). Professionalism involved being respectful, compassionate and empathic in clinical practice (Foster et al., 2023), and/or believing in and committing to their duty to care for the consumers (Bui et al., 2023a; Foster et al., 2023). Some nurses used their professionalism to adeptly regulate their emotions, e.g., when interacting with distressed consumers, so they could be present and empathetic to support the

consumers (Foster et al., 2023). Additionally, when facing COVID-19 related restrictions (such as social distancing directives) that challenged their capacity to provide care (e.g., cutbacks on face-to-face consumer contact), nurses drew on their sense of professional duty to drive themselves to provide the best care they could to the consumers in need (Bui et al., 2023a). In the restrictive clinical environment, they devised new care plans or strategies (e.g., alternating telehealth appointments with brief phone check-ins with the consumers) that enhanced care delivery while adhering to the safety precautions required for COVID-19 (Bui et al., 2023a).

Another new finding was the role of a growth mindset in maintaining resilience. By adopting a growth mindset (person's belief that intelligence and abilities can be developed through learning, experience, effort, and dedication (Yeager & Dweck, 2020) to navigate and make the most of difficult situations (e.g., interpersonal conflicts), nurses persevered through these challenges and strived for positive outcomes for themselves and others (Foster et al., 2023). This mindset, which included wanting to learn and grow, also helped MHNs recognise their personal and professional development from overcoming past workplace challenges (Bui et al., 2023a). Many nurses were able to reflect on the successful coping strategies they had previously used in challenging situations and learnt to incorporate them into their personal resilience repertoire, which increased their confidence in coping with future adversities (Bui et al., 2023a).

2.3.2.3.b | Measurement of Resilience. Across six cross-sectional studies and one pilot randomised controlled trial, three tools were used to measure MHNs' resilience: the 25-item Connor-Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003), the 6-item Brief Resilience Scale (BRS) (Smith et al., 2008), and a modified version of the Resilience at Work (RAW) Scale (Winwood et al., 2013). In contrast, the original review (Bui et al.,

2023b) identified nine different tools used across 12 quantitative cross-sectional studies and one interventional study. Of these nine tools, only seven (including the CD-RISC, the BRS, and the RAW scale) were validated resilience measures. This newer trend indicates that the measurement of resilience in mental health nursing is becoming more consistent.

The 25-item CD-RISC (potential score ranges from 0 to 100) (Connor & Davidson, 2003) was used in three studies. Alonazi et al. (2023) concluded that their sample of n = 179 Saudi Arabian MHNs had high levels of resilience (mean = 94.6) while Hasan and Alsulami (2024) found that only one-third of their sample of n = 250 Saudi Arabian MHNs scored above the average (mean = 63.31). Chen et al. (2022) did not provide an interpretation of the resilience score (mean = 79.35) of their sample of n = 450 Chinese MHNs. While the CD-RISC scale lacks universally established cut-off scores, this result is notably higher than the resilience score (mean = 59.99) reported in a Chinese general population sample (n = 10,997) (Ni et al., 2016).

Three studies used the BRS (potential score ranges from 1 to 5) (Smith et al., 2008). The resilience scores of n = 144 Australian MHNs (mean = 3.45) (Foster, Shakespeare-Finch, et al., 2024) and of n = 107 MHNs from the UK (mean = 3.02 at baseline and six weeks post-intervention) (Henshall et al., 2023) were within the moderate category (i.e., between 3.0 and 4.3). Similarly, the resilience scores of four cohorts of n = 87 Australian MHNs transitioning into the field, ranged between 3.4 and 3.8, which also indicated moderate resilience (Foster, Steele, et al., 2024).

Alenezi (2024) employed a modified version of the RAW Scale, using a 5-point (instead of 7-point) Likert scale (Winwood et al., 2013). They found that less than half (48.8%) of the participants had a high level of resilience (RAW scores were between 63 and

85), 50.4% had a moderate level of resilience (RAW scores were between 40 and 62), and 0.8% had a low level of resilience (RAW scores were between 17 and 39). Overall, across studies, MHNs' resilience levels were reported as moderate to high, which is consistent with the published review.

2.3.2.3.c | Factors Associated with MHN Resilience. Four quantitative cross-sectional studies investigated the relationship between resilience and wellbeing, psychological distress, coping self-efficacy (nurses' perceived ability to cope effectively against challenges) and posttraumatic growth (PTG). Similar to the published review, resilience was positively associated with wellbeing and negatively associated with psychological distress (Bui et al., 2023b). Foster, Shakespeare-Finch, et al. (2024) found a moderate ($r = 0.40$) positive relationship between resilience and psychological, social, and emotional wellbeing. Similarly, Foster, Steele, et al. (2024) and Chen et al. (2022) found a moderate ($r = 0.40$) (Foster, Steele, et al., 2024) to strong ($r = 0.786$) (Chen et al., 2022) positive relationship between resilience and psychological wellbeing. Hasan and Alsulami (2024), on the other hand, examined the correlation between the five dimensions of resilience as measured with the CD-RISC (i.e., personal competence, trust, positive acceptance, control, and spiritual influence) and the six dimensions of psychological wellbeing as measured with Ryff's Scales of Psychological Well-Being (i.e., autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance) (Ryff & Keyes, 1995). They concluded there was a moderate ($r = 0.31$ to $r = 0.67$) positive relationship between all dimensions of resilience and psychological wellbeing except for a negative correlation between environmental mastery (wellbeing dimension) with trust ($r = –0.41$) and positive acceptance ($r = –0.37$) (resilience dimensions). For psychological distress, Foster, Shakespeare-Finch, et al. (2024) and Chen et al. (2022) both reported a negative correlation ($r = –0.38$ and $r = –0.448$, respectively) with resilience. Foster, Shakespeare-Finch, et al.

(2024) also found a moderate positive relationship between resilience and coping self-efficacy (r = 0.49), but no association between resilience and PTG. This finding contrasted with Dahan et al.'s (2022) study, as reported in the published review (Bui et al., 2023b), which showed a positive correlation (r_s = 0.24) between resilience and PTG.

Resilience was positively associated with MHNs' emotional intelligence behaviours (r = 0.42; Foster, Shakespeare-Finch, et al., 2024) workplace belonging (r = 0.33; Foster, Shakespeare-Finch, et al., 2024), work satisfaction (r = 0.26; Foster, Steele, et al., 2024), and compassion satisfaction (i.e., positive feeling derived from helping others; r = 0.632; Alonazi et al., 2023). Conversely, resilience was negatively associated with occupational stress (r = –0.331; Chen et al., 2022) and perceived stress (r = –0.65; Foster, Steele, et al., 2024), burnout (r = –0.47; Alonazi et al., 2023), secondary traumatic stress (r = –0.21; Alonazi et al., 2023), and turnover intention (r = –0.21; Foster, Shakespeare-Finch, et al., 2024). A high level of resilience was found to be associated with less exposure to workplace violence (odds ratio = 0.92; Alenezi, 2024). Resilience was also found to partially mediate (β = -0.230; Chen et al., 2022) the relationship between occupational stress and psychological wellbeing. Except for the positive association between resilience and compassion satisfaction, these practice-related factors have not been reported in the studies included in the published review.

2.3.2.3.d | Resilience Interventions. Only one further study reported a resilience intervention program for MHNs, known as the REsOluTioN program (Henshall et al., 2023). This was a pilot randomised controlled trial with n = 107 nurses at a mental health National Health Service (NHS) trust in the United Kingdom between August 2021 and May 2022. The majority of nurses (n = 95) worked in community and mental health services or forensic setting, and the remaining (n = 8) worked in corporate and learning disability settings. Fifty-six nurses were randomised to the intervention group, and 51 were in the waitlist control

group. Surveys were used to collect outcome data on participant engagement, acceptability of the program, resilience (Brief Resilience Scale) (Smith et al., 2008), and psychological wellbeing (Warwick-Edinburgh Mental Wellbeing Scale) (Tennant et al., 2007). A total of n = 107 participants completed the pre-program survey upon registration, and n = 93 participants completed the post-program survey six weeks after the intervention.

The theoretical basis of the online REsOluTioN program was not explicitly described in this RCT (Henshall et al., 2023) or in the pilot study of the REsOluTioN program (Henshall et al., 2020) that was reported in the published review (Bui et al., 2023b). Both studies referred to an earlier iteration of their program (McDonald et al., 2012). In this iteration, the key characteristics of personal resilience explored – i.e. maintaining optimism, cultivating emotional awareness, enhancing self-reflection, nurturing positive professional relationships, and attaining life balance and spirituality – originated from a literature review by Jackson et al. (2007).

The weekly web-based REsOluTioN program was delivered online over four weeks and incorporated both synchronous and asynchronous learning approaches (Henshall et al., 2023). It comprised online facilitator-led large group sessions, independent preparatory online learning, and online small group mentoring sessions. The facilitator-led large group sessions included group discussion and breakout activities and covered four modules: 1) building hardiness and maintaining a positive outlook; 2) intellectual flexibility and emotional intelligence; 3) reflective and critical thinking; and 4) achieving life balance and enabling spirituality. The online mentoring sessions aimed to support mentees and focused on nurturing positive relationships to protect nurses against workplace adversity. These mentoring sessions facilitated mentee-led discussions related to the program content or practical applications.

There was no statistically significant difference in resilience scores or psychological wellbeing scores between the intervention and control groups in the REsOluTioN program (Henshall et al., 2023). Participants reported the program was helpful for improving their resilience, relationship and communication with colleagues, and self-confidence in their ability to provide good care. The program was acceptable, with the sessions on intellectual flexibility and emotional intelligence rated 'most favourably', as 75.8% (n = 25) of participating nurses indicating they found these sessions particularly helpful. Free-text responses from the post evaluation indicated that the networking and mentorship aspects of the program were enjoyable for nurses, but that their heavy work demands made it challenging for them to find time to participate in the program (Henshall et al., 2023).

2.4. Discussion and Conclusion

The purpose of this literature review update was to identify new empirical literature published within the last two years since the published review (Bui et al., 2023b) to extend existing knowledge on resilience in mental health nursing. Findings from a further nine studies investigating resilience in mental health nurses were synthesised, with the majority being quantitative cross-sectional studies. While most studies acknowledged the impacts of COVID-19 on the research conduct, only two studies specifically investigated the resilience of MHNs during COVID-19 (Bui et al., 2023a; Foster, Shakespeare-Finch, et al., 2024). Of relevance, there was one additional pilot randomised controlled trial on a resilience intervention for MHNs since the original review. However, similar to findings from the original review, there were no process evaluation studies conducted to assess the implementation of resilience interventions for MHNs. Overall, all nine included studies were rated as high quality, in contrast to the published original review where only four out of 15 studies were rated as high quality (Bui et al., 2023b).

Consistent with the published review (Bui et al., 2023b), the original review by Foster et al. (2019), and the wider resilience literature (Chmitorz et al., 2018), the heterogeneity of resilience conceptualisations remained evident across studies. However there were now more studies (i.e., five out of nine) conceptualising resilience as a dynamic process (which was consistent with those of leading experts in resilience search) (Vella & Pai, 2019) and not simply as a personal ability. This indicates researchers are more aware of contemporary resilience definitions, and are basing their research on these accordingly. This provides a more consistent basis to scaffold future research on. Further, across studies, MHNs' resilience continued to be moderate to high, and there was greater homogeneity around the tools used to measure resilience. In particular, the Connor-Davidson Resilience Scale and the Brief Resilience Scale were each used in three studies. However, none of the studies employed resilience measures that conceptualise and measure resilience as a process, for example, the Workplace Resilience Inventory (McLarnon & Rothstein, 2013). Thus, recommendations for future research to use contemporary conceptualisations of resilience and process-based resilience measures from the published review remain relevant.

Additionally, findings from both qualitative studies (Bui et al., 2023a; Foster et al., 2023) and the pilot randomised controlled trial (Henshall et al., 2023) continued to highlight the importance of external supports (e.g., from family, friends, and health organisations) and self-care activities – both personal (e.g., hobbies outside of work) and professional (e.g., employee assistance service) – for MHNs to maintain their resilience in practice and throughout COVID-19. For instance, Henshall et al.'s (2023) resilience intervention included a module discussing strategies to improve work-life balance, and facilitated mentorship between senior and junior MHNs to nurture supportive relationships (Henshall et al., 2023). Mentorship may be considered part of nurses' professional self-care and could supplement other existing activities such as clinical supervision and reflective practice sessions. There is

a need for further randomised controlled trials to establish the efficacy of resilience interventions for the mental health nursing profession.

The focus of empirical quantitative research (n = 6) in this update remained on the correlates and predictors of resilience, particularly those related to nurses' wellbeing (e.g., psychological wellbeing and psychological distress) and practice (e.g., compassion fatigue, emotional intelligence behaviours, and occupational stress). The relationship between resilience and these constructs has been well-established, given the large number of quantitative cross-sectional studies on the topic that have been included in earlier reviews (Bui et al., 2023b; Foster et al., 2019) and this update. In contrast, the relationships between resilience and workplace belonging, coping self-efficacy, and emotional intelligence were explored in only one study (Foster, Shakespeare-Finch, et al., 2024). These are novel and important areas of research that have yet to receive adequate attention. For instance, prior to Foster and colleagues' (2024) study, the relationship between workplace belonging and resilience has not previously been reported in mental health nursing, although there is evidence in the wider literature of an association between workplace belonging and higher resilience in emergency service personnel (Shakespeare-Finch & Daley, 2017).

Coping self-efficacy, which reflects the perceived ability to cope effectively with challenges (Chesney et al., 2006), and emotional intelligence, an important aspect of resilience and professional practice (Raghubir, 2018; Sharrock, 2021), are both key resilience factors. These factors are psychological resources that can ameliorate the potential negative impacts of stress on nurses' psychological wellbeing (Benight & Cieslak, 2011; Schäfer et al., 2023). Evidence from the qualitative studies in this update (Bui et al., 2023a; Foster et al., 2023) suggested that emotional regulation (the ability to recognise and regulate one's own and others' emotions) is part of the resilience process and helps MHNs manage stress

following adversity. There is limited prior knowledge, however, on the importance of these factors in resilience interventions for MHNs. Coping self-efficacy improved in a pilot study of the antecedent PAR resilience program implemented with MHNs (Foster, Shochet, Wurfl, et al., 2018). Emotional intelligence was a component of Henshall et al.'s (2023) resilience intervention, which was rated most favourably by participating nurses but not specifically measured. These findings warrant further investigation and are relevant to the current thesis and the Promoting Resilience in Nurses (PRiN) program implementation and trial.

In this update, no direct relationship was found between resilience and posttraumatic growth (PTG) (Foster, Shakespeare-Finch, et al. (2024). Similarly, Itzhaki et al. (2015) showed no correlation between resilience (measured with a shortened, 10-item version of the CD-RISC) and PTG in a cohort of n = 118 MHNs working at a mental health hospital in Israel. In contrast, Dahan et al. (2022) demonstrated a significant positive correlation ($r_s = 0.24$) between personal resilience (measured with an abridged 10-item version of the CD-RISC) and PTG in a cohort of n = 183 MHNs in Israel. These findings are consistent with the wider literature (Tedeschi et al., 2018), as resilience and PTG are generally considered two distinct theoretical constructs. However, resilient individuals (i.e., those who effectively engage resilience processes to recover from adversity) may also exhibit PTG when experiencing traumatic events (Tedeschi et al., 2018). For instance, qualitative findings from Bui et al.'s (2023a) study indicated that, in the process of building and maintaining resilience against COVID-19 challenges, nurses developed a greater awareness of their personal strengths, considered new possibilities (i.e., new approaches to clinical practice and self-care), and experienced improved relationships (with colleagues, family, and friends). These are aspects of posttraumatic growth (Lepore & Revenson, 2006). Some studies have suggested that positive coping strategies such as cognitive reframing and positive self-talk can have a mediating role between PTG and resilience (Li & Hu, 2022; Ogińska-Bulik &

Kobylarczyk, 2015). Further research is needed to explore how resilience interventions for MHNs that incorporate positive coping strategies such as cognitive reframing may influence PTG, and the impacts, if any, on outcomes from PTG education in resilience interventions.

2.5. Chapter Summary

This chapter provided an update on the evidence from resilience research in the field of mental health nursing, presented as an integrative review published in 2022 and an update of subsequent literature in 2024. These review findings indicated that the benefits of resilience to MHNs' wellbeing and nursing practice have gained greater recognition over the past seven years since the original review by Foster et al. (2019), with the majority of research examining how MHNs build and maintain their resilience in practice, and the relationships between resilience and wellbeing and practice outcomes (such as psychological wellbeing, compassion fatigue, and job satisfaction). In contrast, limited research has been conducted to test the effectiveness of resilience interventions for MHNs or to examine resilience factors (such as coping self-efficacy and workplace belonging) and other factors (e.g., posttraumatic growth) that might be applicable to these interventions. Further research in these areas is warranted to design and test effective resilience interventions with a strong theoretical basis. The next chapter discusses the research framework and methodology that guided the research in this thesis and includes the published research protocol.

Chapter 3: Methodology

3.1. Chapter Introduction

This chapter provides an overview of the research paradigm and methodology used in the thesis. The chapter commences with the published study protocol. Further methodological detail that expands on information provided in the protocol is then presented. This includes a description of pragmatism as the research framework for this process evaluation. The process evaluation design and convergent mixed methods approach to data collection, analysis, and integration are described. The conceptual framework for the thesis, i.e., Normalisation Process Theory, is further explained.

3.2. Thesis Aim and Objectives

The **overall aims** of this thesis were to i) identify factors that may help explain variation in participant outcomes (i.e., between the intervention and control arms) in the randomised controlled trial of the Promoting Resilience in Nurses (PRiN) program, and ii) evaluate PRiN program implementation.

To address the thesis aims, the **specific objectives** were to:

1. Describe mental health nurses' and managers' perspectives on, and satisfaction with, the PRiN program.
2. Identify barriers and facilitators to implementation of the PRiN program.
3. Identify the extent to which the PRiN program was delivered as intended.
4. Explore and describe mental health nurses' experiences of the PRiN program, and how they applied the knowledge and skills learnt in the program to their personal life and practice.
5. Explore the experience and impacts of the COVID-19 pandemic on the resilience of nurses in mental health settings.

6. Explore factors in implementation of the PRiN program that may help explain variation in trial outcomes between the intervention and control groups.

3.3. Publication 2: Protocol For a Mixed Methods Process Evaluation of the Promoting Resilience in Nurses (PRiN) Trial.

This article was published in 2022 in the International Journal of Mental Health Nursing (Bui et al., 2022). An authorship statement of contribution (Appendix 1) is included. The journal is currently ranked Q1 (SJR = 1.572) by SCImago (n.d.), is the top ranked mental health nursing journal, and has an impact factor of 3.6 (Clarivate, 2023). Full citation for the article is as follows:

> Bui, M. V., McInnes, E., Ennis, G., & Foster, K. (2022). Protocol for a mixed methods process evaluation of the Promoting Resilience in Nurses (PRiN) trial. *International Journal of Mental Health Nursing, 31*(3), 687–696. https://doi.org/10.1111/inm.12989

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ORIGINAL ARTICLE

Protocol for a mixed methods process evaluation of the Promoting Resilience in Nurses (PRiN) trial

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ABSTRACT: *Mental health nurses are exposed frequently to occupational stress and can experience a range of negative impacts on their well-being and intention to stay in the nursing workforce. Promoting Resilience in Nurses (PRiN) is a strength-based resilience education programme that incorporates evidence-based cognitive behavioural and interpersonal approaches with post-traumatic growth theory. A partially clustered randomized controlled trial at a large public mental health service will be used to examine the effects of PRiN on mental health nurses' coping self-efficacy, resilience, well-being, mental health, emotional regulation, post-traumatic growth, workplace belonging, and turnover intention as compared to controls. Process evaluations are increasingly used to help understand and interpret trial results for complex interventions. This paper describes the protocol for an embedded mixed methods process evaluation that aims to evaluate the PRiN programme implementation and identify factors that may explain variation in participant outcomes in the trial. Data collection includes a programme participant satisfaction survey; a follow-up semi-structured interview with selected programme participants; a unit/team manager survey on barriers and facilitators to staff recruitment and programme participation; and a fidelity checklist completed by programme facilitators. Normalisation Process Theory will be used to inform data analysis and integration. The findings will provide insights into factors that affect programme implementation, particularly in the context of the COVID-19 pandemic and may help explain differences in participant outcomes. Findings will also inform post-trial programme sustainability as well as potential future upscale and adaptation for implementation across healthcare settings.*

KEY WORDS: *COVID-19 pandemic, mental health nursing, process evaluation, randomized controlled trial, resilience programme.*

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INTRODUCTION

This paper describes the study protocol of a process evaluation that aims to evaluate the implementation of the Promoting Resilience in Nurses (PRiN) resilience education programme for mental health nurses and to identify factors that may explain variation in participant outcomes. The process evaluation is being conducted in parallel with a partially clustered randomized controlled trial. This world-first trial examines the effect of PRiN on mental health nurses' coping self-efficacy, resilience, well-being, mental health, emotional regulation, post-traumatic growth, workplace belonging, and turnover intention in comparison with controls and in the context of a mentally and emotionally demanding work environment. The process evaluation will employ a mixed methods approach to gather data on the experiences of programme participants, and perspectives of programme facilitators and managers involved in recruiting staff into the PRiN trial. Normalisation Process Theory (NPT), a framework used to help explain the implementation of complex interventions in health settings, will inform data analysis and integration.

BACKGROUND

Maintaining a sustainable mental health nursing workforce is an ongoing challenge for many countries due to the undersupply of specialist mental health nurses (MHN) (Adams *et al.* 2021; Harrison *et al.* 2017). Recruitment in mental health nursing is challenging because of the global nursing shortage (Harrison *et al.* 2017; Redknap *et al.* 2015) and, more recently, because of the increasing care demand caused by the COVID-19 pandemic (Al Thobaity & Alshammari 2020). The mental health work environment is a further contributing factor, which has been associated with unpredictable risks to staff including interpersonal conflict with consumers and colleagues, client aggression, and suicidality (Foster *et al.* 2018). In addition, even though MHN comprise the largest proportion of the mental health workforce, mental health nursing is one of the least preferred specialist pathways for under-graduate and newly graduated nurses (Hooper *et al.* 2016; Hunt *et al.* 2020). Workplace stressors contribute to high turnover in the mental health nursing workforce compared with generalist nursing specialties (Huang *et al.* 2021; Redknap *et al.* 2015). Consequently, in Australia, there is a projected undersupply of approximately 18,500 MHN by 2030 (Health Workforce Australia 2014).

Further challenges for MHN include working in resource-constrained healthcare settings with ongoing staff shortages (Joubert & Bhagwan 2018), poor skill mix (Baker *et al.* 2019; Jones & Gregory 2017), lack of organizational support (Foster *et al.* 2021), and heavy workloads (Cosgrave *et al.* 2018; Foster *et al.* 2021). These negative impacts can accumulate and cause significant burnout, compassion fatigue, job dissatisfaction, and career dropout (Joubert & Bhagwan. 2018). They are also detrimental to staff health, well-being, and practice. Hsieh *et al.* (2018), for instance, reported that 76% of assaulted MHN show depressive symptoms, while Kelly *et al.* (2016) found that anger (in response to workplace conflict with consumers and colleagues) was strongly correlated with negative physical health outcomes (e.g. cardiovascular disorders and poorer health habits) for MHN. In addition, MHN have reported that high-quality nursing care and strong therapeutic relationships with consumers can be compromised in workplaces that are not supportive of staff well-being (Foster *et al.* 2020; Huang *et al.* 2021; Roviralta-Vilella *et al.* 2019).

The COVID-19 pandemic has added to these challenges (Foye *et al.* 2021; Ward-Miller *et al.* 2021). On the one hand, mental health consumers are presenting with higher acuity, more severe mood symptoms, and an increased risk for suicidality (Kameg 2021). On the other, MHN are required to adapt to the rapidly changing landscape of patient care, including managing health service disruptions to 'business as usual', implementing high-level infection prevention control, and adopting technology (e.g. telemedicine) into care delivery (Li & Zhang 2020; Ward-Miller *et al.* 2021). Foye *et al.* (2021) conducted a mixed methods survey with $n = 897$ UK mental health nurses and found that 61.4% were concerned about keeping up with the rapid adaptation of the health service, 53.5% worried about being infected with COVID-19 at work, and ~40% believed that service restructuring could prevent consumers from receiving appropriate and timely care. Other concerns related to COVID-19 included a lack of personal protective equipment (Foye *et al.* 2021), changes to electroconvulsive therapy protocols due to the aerosolizing nature of the procedure (Ward-Miller *et al.* 2021), visitor restrictions that negatively impacted consumers' mental health (Li & Zhang 2020; Ward-Miller *et al.* 2021), and consumers' resistance to infection prevention protocol (e.g. refusing to wear mask or breaching social distancing) (Ward-Miller *et al.* 2021). There has never been a more pressing time for the implementation of interventions to strengthen and

support the psychological well-being and resilience of MHN.

Resilience, originally viewed as an individual trait, can be understood as a dynamic process of recovery and positive adaptation in the face of adversity (Reich *et al.* 2010). As a process, it involves interactions between a person's internal resources and the available external resources they use to support themselves during times of stress (Reich *et al.* 2010). This interaction can promote thriving and positive well-being outcomes (Fletcher & Sarkar, 2013; Foster *et al.* 2019; Reich *et al.* 2010; Ungar 2011). Importantly, resilience can be learned and improved through education and training (Foster, Shochet *et al.* 2018; Ungar 2021). While a systematic review indicates growing evidence on the outcomes of resilience programmes for the wider healthcare workforce (Cleary *et al.* 2018), there is little evidence on the outcomes and implementation of resilience programmes for mental health nursing (Foster *et al.* 2019). An integrative review of international mental health nursing literature found one feasibility study and no reports of large scale trials of resilience programmes in this specialty field (Foster *et al.* 2019), with one small pre/post study reported with the UK forensic nurses since then (Henshall *et al.* 2020).

Foster, Shochet et al. (2018) conducted a world-first pilot of the antecedent Promoting Adult Resilience (PAR) (Shochet *et al.* 2008) workplace resilience programme with MHN. Key findings included that equipping MHN with cognitive, emotional regulation, and relational resilience strategies significantly improved their coping self-efficacy, mental health, and resilience and had the potential of increasing work satisfaction and retention (Foster, Shochet et al. 2018). The programme was found to be feasible and acceptable, with programme facilitators reporting high levels of programme fidelity and participants reporting high levels of satisfaction (Foster, Shochet et al. 2018). The PAR programme was subsequently tailored specifically for the mental health nursing workforce and comprises the current Promoting Resilience in Nurses (PRiN) programme being trialled.

Promoting Resilience in Nurses (PRiN) – Partially clustered randomized controlled trial

This is the first randomized controlled trial internationally to combine mental health nursing and resilience research to proactively address the problem of mental health nurses' workplace stress and associated retention and practice concerns. The PRiN programme is strength-based and incorporates the evidence-based of cognitive behavioural and interpersonal approaches with post-traumatic growth theory (Shochet *et al.* 2008). The overall aim of the trial was to determine the effects of this resilience-building programme on mental health nurses' coping self-efficacy (primary outcome), and emotional self-regulation, psychological well-being, mental health, workplace belonging, resilience, post-traumatic growth, and turnover intention (secondary outcomes). The study also aimed to develop new knowledge on the application of resilience and post-traumatic growth theory to mental health nursing.

To determine the effects of PRiN on outcome measures, a partially clustered randomized controlled trial is being conducted. When programmes are delivered by facilitators to groups of people, outcomes for people in the same programme delivered by the same facilitator may be more similar, leading to clustering. Trials of such programmes should take this effect into account (Roberts & Roberts 2005). A partially clustered randomized controlled trial is a design that features clustering for the treatment arm and individual randomization for the control arm (Lohr *et al.* 2014). Therefore, in the programme arm clusters are induced by group delivery of the resilience programme. The control arm, on the contrary, are individual nurses. This clustering in one arm only is referred to as a 'partially clustered' (Li & Hedeker 2017) or 'partially nested' design (Roberts & Roberts 2005). As such, the partially clustered design allows for randomized clusters of nurses to be exposed to the resilience programme sequentially over time. The partially clustered design was developed in consultation with an expert statistician as the most appropriate design for the study. The clustering, in one arm only, recognizes that the programme is delivered by designated facilitators, and this has a significant influence on participant outcomes. Based on the researchers' prior experience, the design also accommodates workforce needs through rostered release of staff from the health service.

To ascertain participant outcomes, a self-report questionnaire data with all the outcome measures will be collected over three time points from the programme and control groups: on entry to the study (T1), after programme delivery (T2), and three months after the programme (T3). The statistical models will provide robust tests that isolate effects of the respective primary and secondary outcomes, while controlling for a

range of potential confounds. The trial has been prospectively registered on the Australian and New Zealand Clinical Trials Registry (registration number ACTRN12620001052921).

Process evaluation of the PRiN partially clustered randomized controlled trial

To support interpretation of the trial outcomes and refine the programme theory (Moore *et al.* 2015), a parallel embedded mixed methods process evaluation is being conducted alongside the trial. Process evaluations can be conducted post-intervention or run parallel to intervention trials, and there are an increasing number of process evaluations being conducted in parallel to trials (Grant *et al.* 2013). The aim of a process evaluation is to understand trial processes or mechanisms related to context, setting, programme delivery, and participants that influence participant outcomes and acceptability of the programme, including participants' views and experiences of the usefulness and value of the programme (Byng *et al.* 2008). The findings from a process evaluation can help to explain any human and organizational factors that could influence programme participation, as well as to inform future design and upscale of the programme to other participant populations (May *et al.* 2018; Moore *et al.* 2015). Process evaluations commonly comprise mixed methods data collection, where both quantitative and qualitative data are collected to provide complementary forms of evidence. To address the objectives for each evaluation component in this study, a combination of surveys and interviews will be used to gather data (Grant *et al.* 2013). We will also apply a theoretical framework, the Normalisation Process Theory (NPT), at the analysis and integration stages to deepen understandings of the factors that influence uptake and implementation of PRiN into the health service (Moore *et al.* 2015). The aims of this mixed methods process evaluation are to evaluate PRiN programme implementation and identify factors that may explain variation in participant outcomes in the trial.

METHODS

Study design

A parallel embedded mixed methods process design (Grant *et al.* 2013) will be used to evaluate the implementation of the Promoting Resilience in Nurses (PRiN) programme, and to identify factors that may explain variation in participant outcomes in the randomized controlled trial.

Theoretical framework – normalisation process theory (NPT)

NPT is defined as a 'middle range theory', a generalizable framework for understanding the processes and critical factors relating to the implementation, integration, and normalization of a set of practices into a healthcare setting, such as the PRiN resilience programme (May *et al.* 2016, 2018). The four main constructs of NPT (see Table 1) focus on important aspects of individual and collective behaviours that influence the implementation process of an intervention (May *et al.* 2018). NPT can be included at any stage of a research project lifecycle (May *et al.* 2018) and has been successfully applied to qualitative, quantitative, and mixed methods designs to inform research questions, data collection, and analysis, or used as a theoretical lens to assist with interpreting study findings (May *et al.* 2018; McEvoy *et al.* 2014).

There are two main ways NPT will be used for the current process evaluation: to describe the implementation context and to support interpretation and explanation of the evaluation findings. NPT has been used extensively in many studies as a framework to understand human and organizational contexts around trials (May *et al.* 2018). The *context* includes any external factors that may act as barriers or facilitators to the implementation of the programme or its effects on the intended targets or recipients (Moore *et al.* 2015). An intervention might produce different effects in different contexts; thus, understanding the context is critical for analysis and generalization of the intervention into other settings (Moore *et al.* 2015). Secondly, NPT will be used to inform the *analysis* and *interpretation* of the results, as described in the Data Analysis section of this paper. Similarly to Nordmark *et al.* (2016), we will set out a data matrix to match the four core NPT constructs against our data sources to examine the theory's suitability to the study.

Promoting Resilience in Nurses (PRiN) programme

The PRiN© programme was developed by Ian Shochet and colleagues at Queensland University of Technology and tailored specifically for mental health nursing, including programme content, activities, and audio-visual clips relevant to this specialty field. This

TABLE 1 *NPT core constructs and sub-constructs*

Construct	Sub-construct	Description
1. Coherence The work people do individually or collectively to make sense of the intervention	1. Differentiation	How the intervention and their objects are different from others
	2. Communal specification	Building a shared understanding of the aims, objectives and expected benefits of the intervention
	1.3 Individual specification	Understanding the specific tasks and responsibilities around the intervention
	1.4 Internalization	Understanding the value, benefits, and importance of the intervention
2. Cognitive participation The relational work that people do to build and sustain a community of practices around the intervention	1. Initiation	Whether key participants are working to drive the intervention forward
	2. Enrolment	Strategies used to engage buy-in and sustain that engagement to secure implementation
	2.3 Legitimation	Participants believe it is right for them to be involved, and that they can make a valid contribution
	2.4 Activation	Participants collectively define the actions and procedures needed to sustain the intervention and to stay involved
3. Collective action The operational work that people do to enact the intervention	3.1 Interactional workability	Interactional work that people do with each other and with other elements of the intervention to operationalize it in everyday settings
	3.2 Relational integration	Knowledge work to build accountability and maintain confidence in the intervention
	3.3. Skill set workability	Allocation work that underpins the division of labour around the implementation
	3.4 Contextual integration	Allocation of resources, execution of protocols/policies and procedures
4. Reflexive monitoring Appraisal work people do to assess and understand the ways the intervention affects themselves and others	4.1 Systematization	Collecting information to determine the effectiveness and usefulness of the intervention
	4.2 Communal appraisal	Participants evaluate the worth of the intervention together
	4.3 Individual appraisal	Individual participants appraise the effect of the intervention on them experientially
	4.4 Reconfiguration	Redefining procedures or modifying practices

Adapted from May *et al.* (2015).

evidence-based programme has six modules and is delivered by trained facilitators (experienced senior MHN) face to face in a peer-group setting in 2 9 1 day workshops spread three weeks apart. The programme is multimodal and manualized, employing a range of teaching modalities including workbooks, PowerPoint, group discussion (large and small), and individual activities. 'Booster' activities are delivered by SMS to participants in between the two workshop days, as well as weekly activities for three weeks following completion of the final workshop. See Table 2 for an outline of the programme.

Setting

The study is being conducted in a tertiary metropolitan mental health service in Victoria, Australia. This is the largest public mental health service in the state, providing care across a catchment area with a population of over 1.5 million people. The service is comprised of six area health services spanning across the northern and western suburbs of Melbourne, including nine mental health inpatient units and 19 mental health community teams. The service currently employs a total of 1144 registered and enrolled nurses.

Participants and recruitment

Programme fidelity checklist

To measure programme fidelity, all eight trained programme facilitators are eligible for recruitment. Relevant facilitators (two for each programme) will be approached by email prior to each programme, given participant information, and invited to complete hard copy fidelity checklists for each workshop.

Barriers and facilitators survey

To capture information from key organizational stakeholders on barriers and facilitators to staff recruitment into the study and programme participation, all managers and team leaders who have disseminated the study invitation to their staff will be eligible to take part in a survey addressing these issues. After each

TABLE 2 *PRiN programme*

Module	Content overview
1. We can all be resilient	Introduces programme, concept of resilience, and programme model
2. Cool and calm: understanding and managing stress	Identifies sources of stress and stress management and relaxation strategies
3. I am what I think and I can change what I think	Identifies unhelpful self-talk and strategies to challenge this and to think resiliently
4. Promoting positive relationships	Focuses on promoting harmony and practising empathic communication
5. Managing conflict and drawing strength from adversity	Ways to deal with conflict positively and drawing on support systems Explores post-traumatic growth and sense of belonging
6. Putting it all together	Focuses on creating well-being solutions and ending positively

programme, relevant managers/team leaders will be invited by email to complete a brief online survey. The sample size will be determined by how many teams agree to be involved in the trial, estimated to be approximately $\sim n = 25$.

Participant satisfaction survey

The sample size for the programme satisfaction survey is determined by the number of participants in each programme, which will be up to $\sim n = 180$ registered and enrolled nurses during the study period. The inclusion criteria are enrolled or registered nurses employed at the health service at least 0.6 FTE who were randomized to the programme. They will be invited at the end of each programme to complete the survey.

Telephone semi-structured interview

On completion of each programme, to gain participants' perspectives on the programme, on the final page of the programme satisfaction survey, they will be invited to consent to be contacted for a follow-up semi-structured phone interview and to record their contact details. The contact details will be stored in a locked filing cabinet in the investigator's locked office. Based on the maximum total number of programme participants in the trial, up to three consenting participants per programme (i.e. up to $n = 30$ participants) will be randomly selected for interview using simple random sampling method with a random number generator. We aim to reach data saturation during this process, where data become redundant and no new information is found (Saunders *et al.* 2018). However, saturation varies across studies and we will ultimately be guided by the data.

Data collection

Programme fidelity checklist

For each programme delivery, all consenting programme facilitators will be asked to complete the hard copy program fidelity checklist (~10 min). Consent will be implied through completion of the checklist. The checklist was originally developed by the PRiN programme developers. Programme fidelity is measured with ranking each aspect of the programme delivered from 'completed' to 'incomplete'. Facilitators also rate overall participant engagement and usefulness of activities in each programme module from 1/'not at all' to 5/'very', and to rank (1–3) each module from 'completed' to 'incomplete', with open-ended comment sections for all modules and overall comments for any factors affecting overall programme delivery including the venue, communication with participants, technical difficulties, or other factors.

Barriers and facilitators survey

Perceived barriers and facilitators to programme implementation will be measured through a brief (~5 min to complete) nine-item purpose-built online survey, with the survey link distributed to relevant managers by email. Based on the pilot study, the survey was developed by the researchers to elicit feedback on organizational factors affecting study recruitment and participation. Four open-ended questions will ask stakeholders to identify facilitators, benefits, and barriers in relation to staff participation in the programme, and five questions will ask managers to rate on a five-point Likert scale from 'strongly disagree' to 'strongly agree' and provide brief explanation for their responses, on the process of inviting staff to participate in the trial, rostering issues related to staff participation, and perceptions about the programme's benefits to staff and their clinical practices.

Participant satisfaction survey

Programme satisfaction and perceived utility will be measured through a short (~10 min) hard copy survey given to participants at programme completion. The purpose-built survey was originally developed by the programme developers, trialled in the pilot study, and modified for the current programme. The survey comprises 15 quantitative survey questions and three short-

answer open-ended responses. Participants are asked to rate on a five-point Likert scale ('not at all' to 'a great deal'), their experience of the programme, how the programme can be improved, the usefulness of the programme to help them manage stress and interpersonal conflict, and the value of the programme to their professional practice and personal life.

Telephone semi-structured interview

Participant perspectives on the personal and professional impacts of the programme will be elicited through a short (~30 min) follow-up audiotaped semi-structured telephone interview. This method of interview was chosen as it is a viable and effective qualitative interview approach (Drabble *et al.* 2016) and is convenient and flexible for participants, particularly those spread across locations (Roller & Lavrakas 2015), as is the case for staff in this health service, which is located across a wide geographical area. Participants will confirm their informed consent through audio-recorded verbal assent prior to interview commencement. The interview contains five main topic areas, with prompts: two on participants' experience of the programme and helpful components of programme delivery, and three on the influence of the programme on their personal life and professional practice, including how COVID-19 has affected them and their practice in the health service. The interviews will be transcribed verbatim, de-identified, and integrated with written field notes following each interview.

Data analysis

Quantitative data

For the fidelity checklist, items will be descriptively analysed and reported according to percentage of completion, while participant engagement and item usefulness will be descriptively reported with mean and standard deviation. The satisfaction survey and the barriers and facilitators survey will also be analysed descriptively with means and standard deviations using the Statistical Package for the Social Sciences (SPSS) for Windows (IBM Corp, Armonk, USA). Findings from each data set will then be included for triangulation and data integration.

Qualitative data

Qualitative data will be organized and managed using NVivo software. Open-ended written data (fidelity checklist, manager survey, and participant satisfaction survey) will be entered into an Excel spreadsheet. Interview transcripts and open-ended responses will be subjected to the six-stage thematic analysis by Braun and Clarke (2006) using an inductive approach in accordance with the exploratory nature of the study methodology. For each data set, the process involves researchers familiarizing with the data through immersion in data, reading for key concepts, and identifying preliminary themes. Next, codes and sub-codes will be generated and synthesized into categories and sorted into major themes. Each theme is anticipated to produce key findings for data integration. In addition, themes will be mapped onto the four main NPT constructs to facilitate interpretation of the overall results and draw conclusions on PRiN programme implementation in the health service.

Mixed methods analysis and integration

Integration is the interaction between qualitative and quantitative data and is an essential aspect of mixed methods research to obtain greater knowledge yield compared with independent analysis of the data (O'Cathain *et al.* 2010). Following the data triangulation protocol used by Farmer *et al.* (2006), each key finding from each data set will be matched against similar key findings from the other three data sets to create a 'convergence coding matrix'. We will then compare and triangulate the findings to establish whether they are in agreement (data converging), partial agreement (data complementing each other), dissonant (conflict exists between the data), or silent (only one data source contained the data) (Morton *et al.* 2021; O'Cathain *et al.* 2010).

Ethics

The trial and process evaluation have been approved by the Melbourne Health Office for Research (HREC/56912/MH-2020) and relevant University Human Research Ethics Committees (2020-127RC). All participants will receive relevant participant information and provide informed consent prior to data collection. Data will be de-identified and aggregated.

DISCUSSION

In this paper, we have described the study protocol for a parallel process evaluation in a partially clustered randomized controlled trial of the PRiN resilience programme for MHN. The evaluation has been designed to identify barriers and facilitators to PRiN

implementation and provide an understanding of organizational and staff-related factors that might influence trial outcomes. Publication of process evaluation protocols is considered 'best practice' and is important for improving the standards of trials (Moore *et al.* 2015). By publishing the study protocol, our methodological choices are made transparent and the importance of process evaluation in complex intervention trials is highlighted. This will be the first published process evaluation nested within the design of an intervention that aimed to improve the resilience of MHN. We anticipate the study will contribute new knowledge to the emergent literature of implementation research in the field of mental health nursing.

The strengths of this process evaluation include the use of a mixed methods approach to provide quantitative and qualitative data from a range of key stakeholders: programme participants, programme facilitators, and health service managers. By studying the implementation process using different methods and then triangulating the findings, we will obtain a more comprehensive understanding on factors that influenced implementation, how the programme was received, and participant views of the value of PRiN. Another strength of the evaluation is the use of the NPT framework to inform data analysis and to deepen understanding of influential factors of PRiN uptake and implementation into the health service. Formal theories and frameworks are often underused in process evaluations (McIntyre *et al.* 2020), even though they can provide sensitizing concepts that enhance understanding of how the intervention was integrated into practice and highlight the mechanisms that affect programme implementation and trial outcomes (Nilsen 2015). Using this framework in the current study will extend understandings of PRiN programme implementation in a large public mental health service. NPT has been used extensively in prior qualitative or quantitative studies, but only in a few mixed methods studies (May *et al.* 2018). The current study will be a valuable contribution to knowledge in demonstrating the applicability of the NPT framework to mixed methods research and to mental health nursing research.

As with all studies, there are some potential limitations. First, the study is being conducted in a large public metropolitan health service and the findings may not be generalizable to other contexts. It is also possible that participants with negative experiences will not participate, and this may limit feedback that would inform improvements in programme delivery and implementation.

CONCLUSION

This study will be the first theory-based process evaluation embedded in a partially clustered randomized controlled trial of the PRiN resilience education programme for mental health nurses in the Australian context. Outcomes of the evaluation will provide insights into the factors that affect the process of implementing the programme in a large public mental health service in the context of the COVID-19 pandemic and may help explain differences in participant outcomes. The study will add to better understandings on the value of process evaluation in mental health nursing research. Findings will also inform post-trial programme sustainability as well as potential future upscale and adaptation for implementation across healthcare settings.

RELEVANCE TO CLINICAL PRACTICE

The PRiN resilience education programme provides nurses with skills and strategies to improve their well-being and resilience. This is especially relevant for practice given the challenges posed by the COVID-19 pandemic for health services and healthcare professionals. This process evaluation will evaluate the implementation of the PRiN programme, identify factors that can help explain any variation in participant outcomes, and inform future dissemination of the programme to other health services. Findings on the implementation of a resilience programme in a large public mental health service may also positively impact the MHN workforce recruitment and retention crisis. The process evaluation will provide useful information on the value of resilience education for MHN in managing workplace stress, resolving interpersonal conflict, and maintaining their psychological well-being.

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In addition to the published protocol paper, the following sections expand further on the research paradigm, the theoretical framework underpinning the thesis, and the mixed methods process evaluation design with a convergent approach to data collection and analysis.

3.4. Research Framework: Pragmatism

3.4.1 Frameworks in Research

Research frameworks, or paradigms (used synonymously with *worldviews* or *philosophical assumptions*) refer to a set of assumptions or perspectives that researchers hold in the process of knowledge construction (Creswell & Plano Clark, 2018). These assumptions or perspectives are related to *ontology* (i.e., what the nature of reality is), *epistemology* (i.e., how knowledge is generated), *axiology* (i.e., the role of researchers' values in research), and *methodology* (i.e., what process is used for conducting research) (Creswell & Plano Clark, 2018; Crotty, 1998). All research has a framework or philosophical foundation, from which a researcher's choice of study design, study rationale, research purpose, questions, and study significance are structured and grounded (Grant & Osanloo, 2014).

In research that involves mixed methods, there are four common philosophical paradigms: *post-positivism*, *constructivism*, *transformative paradigm*, and *pragmatism* (Creswell & Plano Clark, 2018). The *post-positivist paradigm* is often adopted in quantitative research and suggests that the phenomena of study are objective but can only be known partially and imperfectly (Panhwar et al., 2017). This is because they are influenced by the researcher's presence and the historical or cultural contexts surrounding the phenomena being investigated. According to this paradigm, knowledge can be generated through observation of the phenomena and verification of theories (Panhwar et al., 2017). In contrast, in the *constructivist paradigm* (often used in qualitative research) knowledge is considered to be

generated by the researchers in the research process that involves meaning-making from interaction with the phenomena of study (Krauss, 2005). Qualitative data might represent several meanings generated by the participants, and the researcher, through the process of analysis, generates new meanings out of the data and the phenomenon under investigation (Krauss, 2005). The *transformative paradigm* is often used in research that centres around, and advocates for, social justice for marginalised groups (Jackson et al., 2018). Here, researchers examine different aspects of power and privilege and obtain unique knowledge that could only be assessable through building trusting relationships with participants (Jackson et al., 2018). Lastly, in *pragmatism*, there is a focus on diverting attention away from trying to reconcile competing paradigms (e.g., post-positivism and constructivism) and instead focusing on deciding the best methods to address the research question (Creswell & Plano Clark, 2018). Tashakkori and Teddlie (2003) argue that addressing the research problem should be of the utmost importance even if it requires both qualitative and quantitative research methods with clashing ontologies and epistemologies in the same study. They contend the forced-choice dichotomy between post-positivism and constructivism should be disregarded, and methodological choices should be guided by the practicality and applicability of research philosophy. As a result of this orientation towards 'whatever works' to produce real-world applications, many leading experts consider pragmatism the optimal paradigm for research using mixed methods (Creswell & Plano Clark, 2018).

3.4.2 Pragmatism

In this thesis, *pragmatism* was chosen as the most relevant research paradigm to guide the conduct of this mixed methods process evaluation. The *ontological stance* of pragmatism (i.e., beliefs about the nature of reality) (Mukhles, 2020) holds that the nature of reality (whether singular or multiple) depends on the researcher's interpretations. The *epistemological assumptions* (i.e., the relationship between the researchers and the

phenomena being studied) (Mukhles, 2020) indicate that researchers may move between subjective generation of knowledge (e.g., through biased interpretations of meaning) and objective discovery of existing knowledge (e.g., through unbiased measurement of phenomena) as long as they can address the research problem (Morgan, 2014). To address the research aims in this thesis, both quantitative and qualitative methods were used. This approach was necessary because evaluating the implementation of the PRiN program required program participants' and stakeholders' subjective experiences, as well as measurable descriptive data on program feasibility and acceptability, such as participant satisfaction and program fidelity.

In pragmatism, theories may also be used in the research process to name and characterise a phenomenon (i.e., descriptive theories), to illustrate the relationships between phenomena (i.e., explanatory theories), to predict an outcome from the data (i.e., predictive theories), or to articulate marginalised groups (i.e., emancipatory theories) (Creswell & Plano Clark, 2018; Varpio et al., 2020). *Theory* (i.e., conceptual framework or theoretical rationale) can be defined as logically related propositions that represent the relations between different constructs (Varpio et al., 2020). There are three approaches to inform how theory is used in the research process: *inductive*, *deductive*, and *abductive* (Varpio et al., 2020). In objectivist (i.e., quantitative) research, a general theory is tested through a *deductive* process to determine if research data supports or refutes the theory. In contrast, subjectivist (i.e., qualitative) research uses an *inductive* process to explore individual experiences and perceptions, to generate generalisable conclusions and theories. Theory can also be connected with research data through an *abductive* process (Mitchell, 2018). This involves moving back and forward between inductive and deductive approaches, and theory and data, with the aim to provide the best insight and explanation for the observed phenomenon.

All three approaches were used in this thesis. Qualitative data were inductively analysed to produce findings that illustrate MHNs' experiences of the PRiN program, and MHNs' experiences of resilience during COVID-19. Quantitative data from surveys were deductively analysed and described. In the integration phase, using abduction, qualitative and quantitative process evaluation findings (on the program implementation process) were integrated with trial outcomes. This integration produced meta-inferences that provide new insights and possible explanations for variation (i.e., statistically significant differences) in trial outcomes between the intervention and control groups. In addition, qualitative and quantitative process evaluation findings were inductively 'mapped' onto relevant Normalisation Process Theory constructs to generate theory-informed interpretations of the findings and recommendations for future PRiN program implementation.

3.4.3 Theoretical Framework - Normalisation Process Theory

As outlined in the protocol paper, Normalisation Process Theory (NPT) was used as a theoretical framework in this research. The NPT constructs were used to aid in the interpretation of the qualitative and quantitative process evaluation findings on PRiN program implementation to address the thesis aim of evaluating the PRiN program implementation. The method for mapping these findings to NPT is described in the next chapter - Chapter 4.10.

To extend on the information provided in the protocol paper, Normalisation Process Theory has been developed to describe, characterise, and explain the factors and mechanisms (e.g., individuals' understanding of the purposes and needs for the intervention) that drive and influence implementation processes and impact their outcomes (May et al., 2018). It is a middle-range theory that sits between grand theories (the most abstract) and situation-specific (or micro) theories (McEwen, 2013). Middle-range theories do not offer general laws about

behaviour and structure at a larger, societal level, but they are sufficient to understand social behaviours (i.e., what people do) in contained contexts – for example to understand factors that influenced embedding of a new health care practice within a healthcare setting (May et al., 2009). It is also a theory of action and focuses on the work (instead of attitudes or beliefs) that people do – both individually and collectively – to implement, embed, and integrate a practice or an intervention in healthcare settings (May et al., 2009). By 'work', it is meant that for new practices to become normalised in a healthcare setting, individuals must work independently and collaboratively to implement the practices. Additionally, over time, people must continuously work to maintain the normalisation of the new practice once it has been introduced into practice.

NPT posits that the work needed to implement a practice is influenced by four constructs of implementation mechanisms, i.e., coherence, cognitive participation, collective action, and reflexive monitoring (see Table 3.1 for definitions). In the published protocol, (Bui et al., 2022), the original four NPT constructs (coherence, cognitive participation, collective action, reflexive monitoring) proposed by May and Finch (2009) were included. Since the protocol was published, however, May and colleagues (2022) have posited that the context in which people work to implement an intervention affects the implementation outcomes. This relationship is illustrated in Figure 3.1. As a result, they expanded NPT to include four constructs related to implementation context and four related to implementation outcomes (May et al., 2022), bringing the total number of constructs to 12 (see Table 3.1 for how these apply to the current thesis). This expanded version of NPT is used in this thesis, see Chapter 9.3.

Figure 3.1: Normalisation Process Theory Constructs of Implementation Contexts, Mechanisms and Outcomes (May et al., 2022)

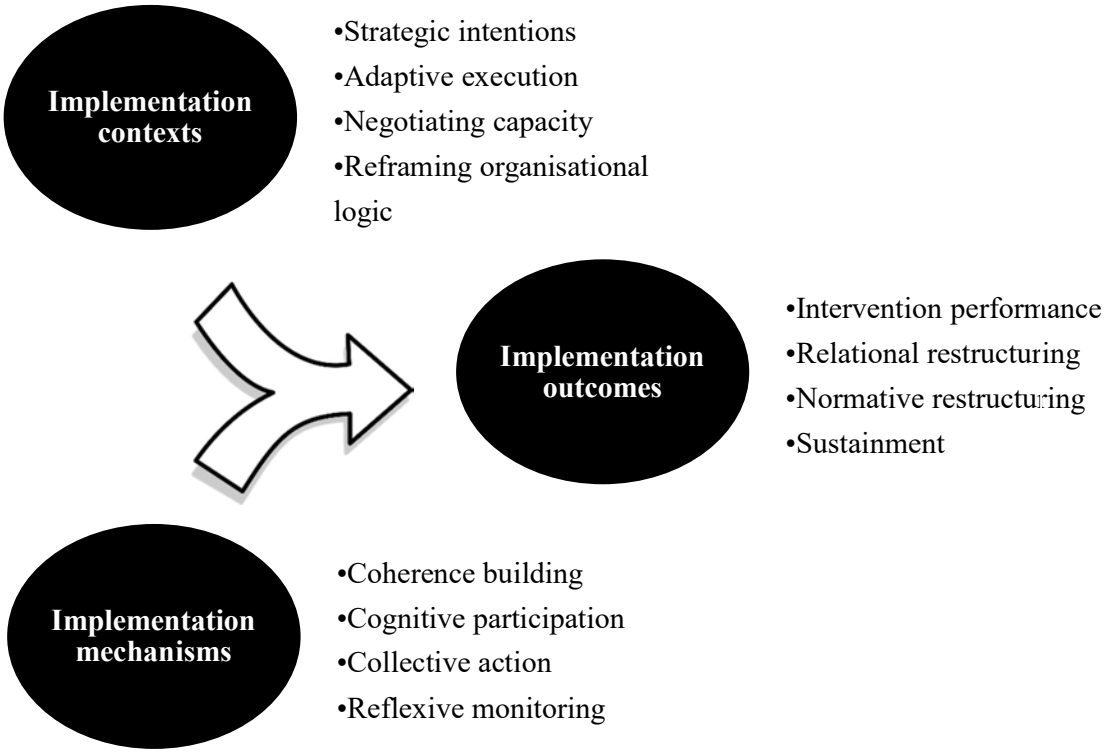


Table 3.1: Updated NPT Constructs and Definitions (May et al., 2022)

Domain	NPT construct	Description
Implementation context, i.e., the health organisation where the PRiN program was implemented and other health services where it might be implemented in the future	*Strategic intentions*	How the PRiN program and its implementation were formulated and designed to answer the needs (i.e., to improve nurses' wellbeing) at health services
	Adaptive execution	How health services could accommodate the program implementation
	Negotiating capacity	How the intervention and its components could be modified to fit into each health service
	Reframing organisational logics	How existing social structural and resources facilitated or hindered the implementation process of the program
Implementation mechanisms, i.e., the work that people did (individually and collaboratively) to implement the PRiN program (i.e., the original four constructs)	*Coherence*	Sense-making process that nurses and managers did to evaluate relevance of the PRiN program to their practice
	Cognitive participation	The process of engagement and buy-in to program implementation at the health service
	Collective action	The actual operationalisation of the implementation
	Reflexive monitoring	The process of evaluating the benefits of the program and assessing how existing clinical practices might have changed following its implementation
Implementation outcomes, i.e., how things visibly change as the implementation processes progress	*Intervention performance*	The changes in nurses' practice resulting from the operationalisation of the PRiN program
	Relational restructuring	The changes in the relationships among staff within the organisation
	Normative restructuring	The changes in the norms of the organisation
	Sustainment	How the PRiN program became incorporated into nurses' practice following its implementation

Normalisation Process Theory is applicable across the whole implementation process, from when an intervention is first trialled at one setting, to the end point where it will be embedded in routine practice and 'disappears' from view (i.e., 'normalised') in other settings (Murray et al., 2010). As a framework, NPT can be applied flexibly at any stage, e.g., early in the process to inform the design of research tools, or later as a theoretical lens to deepen understanding of analyses of factors that influence intervention implementation (May et al., 2018). For example, Alverbratt et al. (2014) used a deductive approach by translating the theory concepts into practical research questions and a coding framework for directed content analysis. Bamford et al. (2014) inductively analysed their qualitative data to generate themes before mapping them onto relevant theory concepts. Tazzyman et al. (2017) used a hybrid approach in which they combined the inductive method of constant comparison analysis with the deductive approach of analysis using NPT as a coding framework. The theory has been used in many qualitative, quantitative, and mixed methods process evaluations (May et al., 2018), and continues to be updated and expanded (May et al., 2022).

Normalisation Process Theory was chosen over other implementation theories for this thesis due to its flexibility, applicability to mixed methods process evaluations, and its contemporary relevance. NPT was relevant to explore the work required by nurses (e.g., to participate in the PRiN program), nurse unit managers (e.g., to release staff to attend the program), senior nurses (to encourage nurses to sign up for the program), and the health service (e.g., to allocate resources to run the program or cover staff release) to implement the PRiN program at the health service. Understanding the work and processes required to implement the PRiN program at this health service helps to understand how the program was embedded as part of professional development at the service, and subsequently, how it may be embedded and normalised at other health services.

3.5. Mixed Methods Process Evaluation Design

3.5.1 Mixed Methods Process Evaluation

In this thesis, drawing on the process evaluation guidance from Moore et al. (2015) and Skivington et al. (2021), and mixed methods approaches to data collection and analysis (Creswell & Plano Clark, 2018), a mixed methods process evaluation design (Figure 3.2) was used to address the two thesis aims: to explore factors that may influence the variation in participant outcomes between the intervention and control group, and to examine how the program was implemented at the health service.

Process evaluations conducted alongside intervention trials have become increasingly common over the last 10 years (Skivington et al., 2021). As their name suggests, process evaluations explore the functioning of an intervention to assist with understanding the factors that influence its implementation and uptake, usually from the perspective of researchers (Moore et al., 2015), health organisations (Cornelissen et al., 2023), and policy makers (Barnow et al., 2024). These factors include implementation context, implementation processes, and mechanisms of impact (Moore et al., 2015). Process evaluations are complementary to outcome studies such as randomised controlled trials (Moore et al., 2015), and help to explain why a successful intervention works and how it can be optimised, or why it fails, or why it produces unexpected outcomes (Skivington et al., 2021). For example, in this thesis, examining the context of the PRiN program implementation could help improve future dissemination of the program to other settings. Many contextual factors in the workplace (including workload demands, lack of workplace resources or poor dissemination of knowledge among the staff) may act as barriers or facilitators to implementation, and impede or strengthen the uptake of a program (Bauer et al., 2015; Grant et al., 2013).

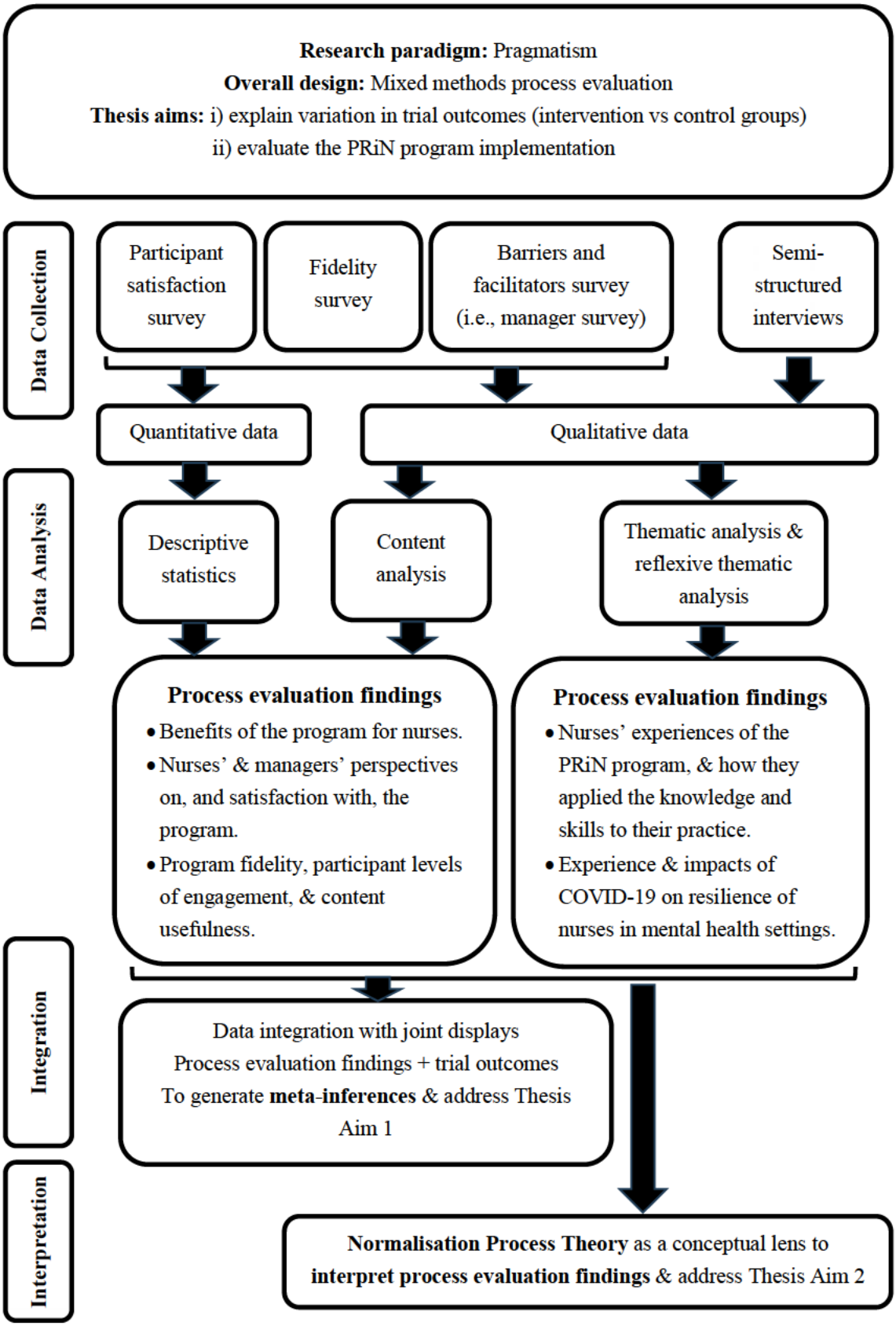
Further, exploring *implementation* (by capturing *fidelity*, *dose*, *reach* and *acceptability* of an intervention) and *mechanisms of impact* (e.g., how participants respond to the PRiN program) can help elucidate the relationship between program delivery and participant outcomes (Moore et al., 2015). When a program is delivered as intended (i.e., strong program fidelity and completed dose), participants might show more robust outcomes. Similarly, if participants and managers perceive the program as useful and valuable, they will generally be more motivated to adopt the intervention, which can lead to stronger positive changes. Information on program fidelity also allows evaluators to assess the degree of acceptable adaptation to program delivery to fit into a different setting without undermining the program's effectiveness (Moore et al., 2015).

3.5.2 Convergent Mixed Methods Approach

A convergent mixed methods approach to data collection, analysis, and integration was selected for this thesis (Figure 3.2). This approach combines qualitative and quantitative methods by simultaneously collecting and analysing both types of data, then integrating the findings to generate a comprehensive understanding of the research problem. This offers several strengths and advantages that are well-suited for process evaluation. In this thesis, to address the second thesis aim to evaluate the PRiN program implementation, quantitative methods were used for fidelity surveys, barriers and facilitators surveys, and program participant satisfaction surveys to measure fidelity, satisfaction, and acceptability. Qualitative methods were employed for semi-structured interviews (with nurses) and free-text survey responses to explore nurses and managers' perspectives and experiences of the program. The qualitative and quantitative data were collected in a similar timeframe and analysed concurrently, which facilitated the timely completion of the study (Creswell & Plano Clark, 2018).

Quantitative and qualitative data provided complementary forms of evidence, which were brought together through data integration to produce greater knowledge yield compared to the independent analysis of each type of data (Creswell & Plano Clark, 2018). Outcomes from the PRiN randomised controlled trial (Foster, Shochet, et al., 2024) were included in the integration phase, in conjunction with the process evaluation findings. Integration was used because Moore et al. (2015) strongly advocates for combining process evaluation findings and intervention results. They contend this approach helps highlight the value of process evaluation findings in randomised controlled trials and demonstrates how process evaluations are used, for example, to help explain trial outcomes or to optimise trial conduct and implementation. This value is often underappreciated and remains less visible in the literature (O'Cathain et al., 2014; O'Cathain et al., 2013). The integration in this thesis was employed to generate meta-inferences (i.e., overall conclusions) to address the first thesis aim - to explore factors that may help explain variation in participant outcomes between the intervention and control arms in the trial.

Figure 3.2: Overview of the Mixed Methods Process Evaluation Design



3.6. Chapter Summary

This chapter presented the published study protocol and expanded on the protocol through describing the research paradigm and mixed methods process evaluation design in more detail. This included the rationale for pragmatism as the research framework guiding the conduct of the research. The chapter also further described the expanded Normalisation Process Theory that was used to sensitise interpretation of process evaluation findings. The next chapter describes the study methods and provides updated information on recruitment, data collection and analysis that is not in the published protocol.

Chapter 4: Methods

4.1. Chapter Introduction

This chapter provides further details and updates on the methods used in the process evaluation, including study recruitment, and data collection, analysis, and integration methods that are not in the published protocol paper in Chapter 3. Additional contextual information (such as the COVID-19 pandemic and health service disaggregation) is also provided.

4.2. Study Setting and Context

As identified in Chapter 1, this process evaluation was conducted at NorthWestern Mental Health (NWMH) in Victoria, Australia alongside the implementation and trial of the PRiN program. At the time of study commencement in 2021, NWMH was a clinical division of Melbourne Health and the largest public mental health service in the state of Victoria. Data collection for the process evaluation occurred between April 2021 and July 2022.

Ethics approval for the trial and process evaluation had been gained from Melbourne Health (HREC/56912/MH-2020) and Australian Catholic University (2020-127RC) and data collection was about to commence in 2020 when the COVID-19 pandemic occurred. Program delivery and the trial were formally put on hold for six months due to State Government policies and the NWMH policy relating to lockdowns (Stobart & Duckett, 2022), thus process evaluation data collection was also delayed. Participant recruitment into the trial and process evaluation commenced in February 2021 and was put on hold for 13 weeks (between 31/08/2021 - 06/12/2021), and intervention delivery was delayed for 28 weeks (from 16/07/2021 -31/01/2022) (Foster, Shochet, et al., 2024). During this period, the research leader met with the health service leader once a week, the program facilitators once a month,

and the project advisory group quarterly, in order to maintain communication, motivation, and support while waiting for lockdown mandates to be lifted.

Additionally, during the period of the trial, as part of the Mental Health reform recommended by the Royal Commission into Victoria's Mental Health System (State of Victoria, 2021), from July 2022, NWMH formally commenced service disaggregation where various area health services split off from the overall service. However, well before that time, informal change had started to occur as staff were informed about the structural changes that were coming and started preparing to move from current roles and sites. Operation of these Area Mental Health Services was progressively taken over by other major health services in the state (such as Northern Health, Western Health, or The Royal Children's Hospital), and there was movement of staff from NWMH to other services.

4.3. Participants, Sampling, and Recruitment – Update from Protocol

Purposive sampling (a non-probability sampling method) was used to recruit the managers, program nurses, and facilitators to complete surveys and checklists for the process evaluation. This sampling method is commonly used when researchers intentionally select participants who have relevant knowledge or experiences related to particular phenomena or processes, e.g., the PRiN program (Robinson, 2014). The inclusion and exclusion criteria are described in the published protocol (Bui et al., 2022) in Chapter 3.3.

4.3.1 Program Fidelity Survey

Between April 2021 and May 2022, program facilitators were invited to complete a fidelity survey (Appendix 13) after each program was delivered. In the survey, they were also asked about any factors that may have impacted program delivery, group interaction, and group dynamics. The sample for program fidelity was n = 7 program facilitators, since one of

the original eight trained facilitators was unable to deliver the program due to personal reasons. All program facilitators completed n = 7 fidelity surveys (one for each program delivered during the trial).

4.3.2 Barriers and Facilitators Survey

Between May 2021 and June 2022, nurse unit managers and team leaders from mental health units/teams who released staff for the program were invited to complete a survey about the barriers and facilitators to implementation of the PRiN program (Appendix 11). The final sample size was n = 25 managers and team leaders, corresponding to 26 mental health units or teams involved in the PRiN trial (one manager worked across two units). A total of n = 17 managers and team leaders completed the survey.

4.3.3 Participant Satisfaction Survey

The sample for the program satisfaction survey comprised all participants in all seven programs (n = 61). Registered and enrolled nurses who participated in the program were approached by the researcher (or other members of the research team) at the end of each program on the second workshop day (April 2021 and May 2022) to complete the hard copy satisfaction survey (Appendix 7). These nurses had completed the first program workshop day three weeks prior to the second workshop, allowing them time to reflect on their experiences of the first workshop and apply the knowledge gained to their lives and work. This sample of n = 61 registered and enrolled nurses was lower than the planned original sample size for program delivery (~n = 180 registered and enrolled nurses in total) (Bui et al., 2022). This was due to the impact of the COVID-19 pandemic on participant recruitment and revised sample of the randomised controlled trial. In total, n = 60/61 nurses who were approached completed the satisfaction survey.

4.3.4 Semi-structured Interview

All 60 registered and enrolled nurses from seven programs who completed the satisfaction survey were all invited to participate in a follow-up interview. A total of n = 38/60 nurses consented to participate in the interview. For each of the seven programs, up to three consenting nurses were then randomly selected with a random number generator (Bui et al., 2022). The randomisation procedure is included in Appendix 8. While random sampling is uncommon for collecting qualitative data (e.g., with semi-structured interviews), it was chosen in the context of the PRiN randomised controlled trial (Bui et al., 2022) to create an equal opportunity for participant selection and a relatively non-biased representation of their experiences across the programs (Suresh et al., 2011). A total of n = 20/38 consenting nurses completed the interview, as there were only two consenting nurses from one of the seven programs.

4.4. Manager, Participant Satisfaction, and Fidelity Surveys

As identified previously, to explore factors that may help explain variation in participant outcomes between the intervention and control arms of the trial, and to evaluate the PRiN program implementation, data on acceptability, program fidelity (including factors that may affect program delivery, group interaction, and group dynamics) and barriers and facilitators to implementation were collected using three types of surveys. The purpose-built program fidelity survey and participation satisfaction survey for program nurses were originally developed by the PRiN program developers for previous iterations of the program (Liossis et al., 2009; Millear et al., 2008), used in the pilot study of the antecedent program PAR (Foster, Shochet, Wurfl, et al., 2018), and modified by the research team for the PRiN trial. The barriers and facilitators survey for managers was developed specifically for the PRiN trial by the research team and administered by the researcher.

These three surveys (program fidelity, satisfaction survey, and barriers and facilitators survey) contained both closed ended items and open-ended questions. For the close-ended survey items, a 5-point Likert-type scale was used. The open-ended questions and the option to leave open-ended responses under some survey items enhanced quantitative descriptive findings by allowing respondents to explain or to corroborate their responses to close-ended items (LaDonna et al., 2018). Further details of the data collection tools, including the questions and survey items, are reported in the protocol article (Bui et al., 2022).

4.5. Semi-structured Telephone Interviews

To explore program nurses' experiences of the PRiN program and how they applied knowledge and skills learnt in the program to their personal life and practice (especially during COVID-19), nurses were interviewed by phone by the researcher. Two advantages of phone interview, i.e., convenience and flexibility, have previously been identified (Bui et al., 2022). In addition, phone interviews can minimise response bias from an interviewer's face-to-face presence and promote disclosure of sensitive information by strengthening participants' sense of anonymity in their own private space (Novick, 2008). Further, the interviews were conducted during COVID-19, when many social distancing measures and restrictions (e.g., no direct face-to-face contact between individuals unless necessary; Stobart & Duckett, 2022) prevented in-person interviews or focus groups, thus a phone interview was more appropriate for participants (Saarijärvi & Bratt, 2021). Video conferencing technology (such as Zoom or Teams) were considered but were unsuitable as not all nurses had access to the technology in their workplaces. Phone interviews can have a few limitations including absence of visual cues and challenges to establishing rapport (Novick, 2008). To counter these limitations, the researcher started the interview with a brief conversation to initiate rapport and paid close attention to participants' verbal cues (Cachia & Millward, 2011; Irvine et al., 2013).

A semi-structured interview, as the name implies, follows an interview guide that contains questions addressing research aims and objectives (Adeoye-Olatunde & Olenik, 2021). This data collection method is particularly useful for exploring participants' experiences and perceptions of a phenomenon (such as their participation in the PRiN program) to interpret the meaning participants ascribed to the phenomenon (Brinkmann, 2013). It is more focused than an unstructured interview, but still permits exploration of pertinent ideas and details arising throughout the interview (Adeoye-Olatunde & Olenik, 2021). The conversational nature of semi-structured interview allows the researcher to be actively involved in the process of knowledge generation, and to direct the conversation in the direction that is the most conducive to producing knowledge to address the research aims and questions (Brinkmann, 2013).

The interview guide (including topic areas) and protocol are described by Bui et al. (2022), and included in Appendix 9. The interview guide was originally developed by the research team and some questions had been piloted in the feasibility study of the antecedent program PAR (Foster, Cuzzillo, et al., 2018). Questions were then refined, and some added by the researcher in reference to COVID-19 in order to capture relevant information. There were 20 interviews in total which were conducted between April 2021 and July 2022, primarily by the researcher. Initial interviews were conducted by the principal investigator of the trial. Participants were interviewed between 2 to 6 weeks following program completion, except for one participant who was interviewed 11 weeks after program completion due to a delay in interview scheduling. The interviews ranged from 21 to 54 minutes with an average of 30 minutes. The interviews were held at a mutually convenient time, and participants were advised to find a private space for the interview to avoid being interrupted and to be able to speak freely. Interviews were audio recorded and transcribed verbatim by a professional

transcription service. Transcripts were cross-checked against the audio recordings by the researcher.

4.6. Data Management and Cleaning

Quantitative data (from survey items) and qualitative data (from open-ended responses) were extracted from hard copy surveys and manually entered into Microsoft® Excel® for Microsoft 365. As per Ethics requirements (National Health and Medical Research Council, 2023), hard copy surveys and checklists were stored in a locked cabinet in the researcher's office. Interview audio recordings were transferred from a hand-held recording device and audio files were kept in the secure university network drive together with scanned digital copies of the surveys and checklists.

There were minimal missing data, and no survey nor checklist was excluded on this basis.

- For the n = 60 participant satisfaction surveys, 900 (100%) close-ended survey items and 171 (95%) open-ended responses were received in total.
- For the n = 17 barriers and facilitators surveys received, 85 (100%) close-ended survey items and 139 (90.8%) open-ended responses were received.
- For the n = 7 program fidelity surveys received, facilitators returned 161 (100%) close-ended items related to level of program module and content unit completion, 151 (93%) closed-ended items related to facilitators' perceived content usefulness, 156 (97%) closed-ended items related to participant engagement with the program content, and 149 (65%) open-ended responses on how the units in each program module were received by nurses and any process issues and environmental factors that might have affected program delivery.

There was no imputation for missing data in the fidelity surveys, and close-ended items with missing data were excluded from analysis.

4.7. Quantitative Data Analysis

Descriptive statistics were used to summarise the data derived from the participant satisfaction survey, barriers and facilitators survey, and fidelity survey, which had 5 point Likert scales (see the published protocol) (Bui et al., 2022). Likert-type scales are 5-point or 7-point ordinal scales commonly used to measure respondents' opinions and the degree of agreement (or disagreement) with a statement (Sullivan & Artino, 2013). Self-report Likert scales are often used in several fields (e.g., psychology and health science) (Norman, 2010; Sullivan & Artino, 2013) because they are convenient and easy to use (Jebb et al., 2021).

A major disadvantage of Likert scales is that, as the scales are ordinal, use of parametric methods to analyse Likert scale data has been a topic of debate in the literature. Many have argued that the distance between the points on the Likert scale (e.g., between 'always' and 'often') may not necessarily be equal, even if the numbers assigned to those points (i.e., '1' and '2') are, and thus ordinal data from Likert-type items should be displayed using median (or mode) and frequencies and should not be subjected to parametric testing (Sullivan & Artino, 2013). However, others, like (Norman, 2010) and (Willits et al., 2016) have suggested that it is acceptable to use parametric statistics with ordinal data because parametric tests are robust and there is a substantial literature to show that parametric testing is appropriate for Likert scale data. Additionally, aggregated rating scales or even individual Likert items can be treated as continuous data, as long as the results were meaningful for the purpose of the study (Knapp, 1990; Norman, 2010; Stevens, 1946). Consistent with other similar studies in the literature that display process evaluation findings using means and standard deviations (Bernburg et al., 2019; Foster, Shochet, Wurfl, et al., 2018), and in

consultation with the University's Faculty Statistician, quantitative data in this thesis were reported with descriptive means and standard deviations for each item, as well as the overall mean and standard deviation in the survey or checklist. This helped facilitate comparison between the findings in this thesis and relevant findings from other studies.

4.8. Qualitative Data Analysis

4.8.1 Open-ended Survey Responses

Qualitative data from open-ended responses in the participant satisfaction surveys, barriers and facilitators surveys, and fidelity surveys were inductively analysed using a conventional approach to qualitative content analysis (Hsieh & Shannon, 2005). This approach is descriptive in nature and is suitable for 'thin' data from open-ended responses in surveys and checklists (Hsieh & Shannon, 2005). Qualitative content analysis began with extraction of open-ended responses from surveys and checklist into an Excel spreadsheet. The responses were grouped under the questions they were derived from (e.g., benefits of participating in the PRiN program). Responses were read and re-read to achieve full immersion. Next, the researcher coded responses line-by-line to generate codes, which were then sorted into initial subcategories under each category corresponding with a survey question. The final categories were produced through an iterative reviewing process and consensus discussions between the researcher and supervisory team (Hsieh & Shannon, 2005).

4.8.2 Interviews

Qualitative data from the semi-structured interview transcripts were subjected to inductive thematic analysis (Braun & Clarke, 2022). Thematic analysis, as an analytic method, is flexible, and aligns with the pragmatic approach of the study design (Vaismoradi et al., 2013). Thematic analysis can be more descriptive or more interpretive, depending on

the data and the research objectives (Braun & Clarke, 2022; Vaismoradi et al., 2013). To explore and describe mental health nurses' experiences of the PRiN program, and how they applied the knowledge and skills learnt in the program to their personal life and practice (Chapter 6), interview transcripts were analysed inductively using thematic analysis, as described in the study protocol (Bui et al., 2022). To explore the experience and impacts of the COVID-19 pandemic on the resilience of nurses in mental health settings, a more interpretive reflexive thematic analysis (Braun & Clarke, 2022), was used – as detailed in the published article, *Mental health nurses' experience of resilience during COVID-19: A qualitative inquiry* (Bui et al., 2023a) in Chapter 7.

4.8.3 Reflexivity

Reflexivity is an important component in the conduct of this thesis, and is defined as the process of analytical self-introspection that researchers engage in during their research, to evaluate how context and their personal subjectivity might influence the research processes (Dodgson, 2019; Olmos-Vega et al., 2023). As per Chapter 1.2, the researcher was both an insider and outsider to this study. As such, I was positioned within the research process, and might have unconscious biases and assumptions that, if left unchecked, could influence how I analysed the data to generate findings to fit my pre-existing beliefs (Dodgson, 2019). It is important, as part of the process of reflexivity, that researchers describe their positionality, i.e., as an 'insider', an 'outsider', or both, within the research and describe what, and how they contribute to the research, and how this may have an impact on the participants and their relationship with them (Olmos-Vega et al., 2023). When a researcher shares similar attributes with the participants in a study (e.g., working in the same profession, as I had), they may be considered an 'insider' (Braun & Clarke, 2013). Conversely, if the researcher does not belong to the group in which the participants reside (i.e., because I was no longer a clinician in mental health and did not work at the health service), they may be considered an 'outsider'

(Braun & Clarke, 2013). Attending to reflexivity throughout a study contributes to high quality and rigorous qualitative research (Dodgson, 2019).

To position myself as a researcher in this thesis, where I am both an 'insider' and an 'outsider' I reflected on my own experience working clinically as a mental health nurse between 2018 – 2019, and my deep connection with mental health nurses who were my family, friends, and former colleagues (see Chapter 1.2). As an 'outsider' in mental health nursing since 2020, I observed the challenges these nurses faced during, and in the aftermath of, COVID-19. I saw nurses experienced heavy workloads, burnout, and increased absenteeism. This led to my assumptions that nurses were not properly supported by management during COVID-19, and that some left their job because of interpersonal conflicts at work (particularly with management). As an 'insider', I reflected on my decision to step away from the clinical work in mental health nursing following my graduate and postgraduate years in 2018-2019. The reasons included psychological trauma from working in a highly acute environment where staff safety was threatened due to lack of organisational resources (such as adequate security presence) and support from management, the team being divided because of interpersonal conflicts, and staff bullying. My 'insider' and 'outsider' experiences could have influenced my interpretation of the data and findings, particularly those related to nurses' workplace belonging and turnover intention, and their clinical practice during COVID-19, so I engaged in a number of processes to manage my assumptions.

To address my underlying assumptions and biases, throughout this research I continuously engaged in self-reflection when analysing and interpreting the data. I kept fieldnotes of my feelings, thoughts, and reactions when interviewing the participants and when I familiarised myself with the interview transcripts. I included contradictory participant

experiences and excerpts (e.g., discrepant information that runs counter to the themes) to avoid selection bias (Creswell & Creswell, 2023). I regularly debriefed with my supervisory team (e.g., after each interview) about how I conducted the interview, and then how I interpreted the data. I was transparent with them about my underlying assumptions so I could seek feedback on the assumptions I held about the data as I was analysing it (Olmos-Vega et al., 2023). By incorporating queries and feedback from supervisors throughout the analytic process, I was able to view the data from different vantage points to get a fuller, more accurate picture of nurses' experiences with the PRiN program and with COVID-19.

4.9. Mixed Methods Analysis and Integration

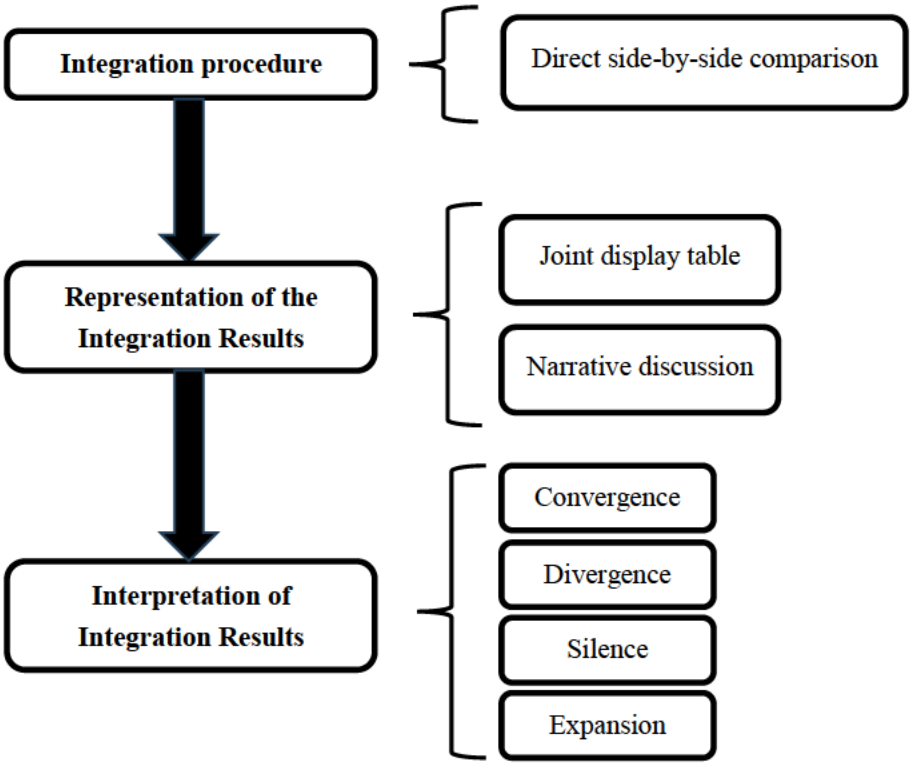
Integration is an essential element of research using mixed methods (Creswell & Plano Clark, 2018) that sets it apart from multiple methods research (Morse & Cheek, 2015; Schoonenboom, 2022). Integrating qualitative and quantitative research findings can enhance and expand understanding of the research problem. Integration occurs after qualitative and quantitative data have been collected and analysed separately (Creswell & Plano Clark, 2018).

There are two approaches to integration: data transformation, or direct comparison of the separate findings (Creswell & Plano Clark, 2018). *Data transformation* involves transforming qualitative findings and data into numeric counts or transforming quantitative data into narrative descriptions. In contrast, *direct comparison* involves looking for commonality across both sets of findings, then rearranging the findings based on similar concepts. The findings are then displayed together using visual means (e.g., the joint display table) or a narrative discussion to weave quantitative and qualitative findings together within the same section of text to discuss their similarities or discordance. In this thesis, direct comparison of the findings using both a joint display table and narrative weaving of the

findings was chosen to integrate qualitative and quantitative findings to address the first thesis aim of understanding variation in trial outcomes between the intervention and control groups.

In integration, there are four key considerations: integration intent, integration analysis procedures, how integrative findings are presented, and how they are interpreted (Creswell & Plano Clark, 2018). The integration procedures, presentation methods, and interpretation outcomes used in this thesis are summarised in Figure 4.1. The intent of integration in this thesis, as per the study aim on trial outcomes, was to develop meta-inferences (i.e., overall conclusions encompassing relevant process evaluation findings) that expanded understanding on factors that helped explain variation in trial outcomes between the intervention and control groups.

Figure 4.1: Integration and Interpretation



Joint displays are the most recommended and commonly used integration method, allowing more directed and nuanced comparison of the findings (Creswell & Plano Clark, 2018). Typically, a joint display includes qualitative and quantitative process evaluation findings, integration interpretations (i.e., how, and why the qualitative and quantitative strands relate to one another), and meta-inferences (i.e., the overall key conclusion generated from the integration; Creswell & Plano Clark, 2018). In addition, to address the thesis aim of identifying factors that may help explain variation in participant outcomes between the intervention and control arms in the trial, the eight trial outcomes (Foster, Shochet, et al., 2024) between program and control groups were included as part of the joint display table and integration process to generate a total of eight meta-inferences. For each trial outcome, relevant quantitative and qualitative findings were populated into the joint display table (Table 4.1) and narratively compared to highlight the mixed methods interpretations, i.e., whether the findings and data *confirmed* (i.e., in agreement), were *discordant* (i.e., if any conflict existed between them), were *silent* (i.e., only one type of findings is present), or *expanded* (i.e., if the findings supported or provided additional meaning for one another) (Younas et al., 2023). See Chapter 8.

Table 4.1: Example of Joint Display Table used for Integration

Trial outcome	**Process evaluation findings and exemplars**		**Integration interpretation**	**Meta-inference**
	Dataset	**Findings and exemplars**		
Trial outcome 1	**Survey**	Finding 1 (exemplary quote) Finding 2 (exemplary quote)	How, and why the trial outcome and process evaluation findings connect.	Meta-inference statement and mixed methods interpretations (e.g., confirmed, discordant, or expanded)
	Interview	Finding 1 (exemplary quote)		

4.10. Mapping of Process Evaluation Findings and Meta-inferences to NPT

Process evaluation findings on the PRiN program implementation were interpreted using Normalisation Process Theory (NPT) in the Discussion chapter (see Chapter 9) to address the second aim of the thesis: to evaluate PRiN program implementation. NPT was outlined in the published protocol (Bui et al., 2022) and Chapter 3.4.3. In this thesis, NPT was used in Chapter 9.3 to help explain PRiN program implementation, for example, by exploring barriers and facilitators to implementation, acceptability of the program, and the extent to which the program was delivered as intended. Because the purpose-built data collection tools (e.g., program fidelity and participant satisfaction surveys) were adapted from those used in the antecedent pilot study (Foster, Shochet, Wurfl, et al., 2018), the NPT constructs were applied later in the research process in this process evaluation (i.e., during the analysis and interpretation stages). Mapping of process evaluation findings from participant satisfaction surveys, barriers and facilitators surveys, fidelity surveys, and semi-structured interviews onto relevant NPT constructs helped to address the second thesis aim: to evaluate the PRiN program implementation, including factors that may have facilitated or hindered the implementation process, and to determine how the program could be transferred to other sites.

4.11. Ethical Considerations

Prior to commencement, the study was approved by the Melbourne Health Office for Research (HREC/56912/MH-2020; main Ethics committee) and lodged with the Australian Catholic University Human Research Ethics Committee (2020-127RC). Ethical approval was granted 01 April 2020 (see Appendix 4). Based on the PAR pilot findings (Foster, Cuzzillo, et al., 2018; Foster, Shochet, Wurfl, et al., 2018), completion of participant satisfaction survey, barriers and facilitators survey, fidelity survey, and phone interviews were not anticipated to cause psychological distress to nurses, managers and program facilitators.

Nurses were provided with information on the Melbourne Health Employee Assistance Program should they need emotional support during and after the interview. To the researcher's knowledge, no participant experienced distress during the process evaluation. No material rewards were provided for participating in the process evaluation, however $30 vouchers were given to nurses who participated in the PRiN trial and completed the outcome measure surveys. The following sections describe processes addressing key ethical principles of Informed Consent and Collection, Use, and Management of Information and Data as applied in this research (National Health and Medical Research Council, 2023).

4.11.1 Informed Consent

For the process evaluation, before participating, managers and program facilitators received study information, an invitation to participate in the study, and surveys via email communication. Completion of the barriers and facilitators survey and the fidelity survey implied their consent to participate. At the end of each program, program nurses were provided with a hard-copy participant information sheet and verbal explanation of the study and were invited to participate in the study. The participant information sheet included study information for both the satisfaction survey and semi-structured interview, such as study purpose, process, voluntary participation, confidentiality and data security, benefits and risks of participation, and their right to withdraw – see Appendix 6. Completion of the satisfaction survey implied informed consent. Nurses could record their contact details at the end of the satisfaction survey to consent to be contacted for a follow-up semi-structured phone interview. Prior to each interview, participants were reminded that participation in the interview was completely voluntary and withdrawal from the study would not have any adverse consequences to their relationship with the organisation. They could choose not to answer any questions or to withdraw from the interview at any time. At the beginning of the

interview, participants' verbal assent to participate in the interview, and for the interview to be audio-recorded, was recorded.

4.11.2 Participant Protection and Privacy

Program satisfaction surveys were completed anonymously, placed in a sealed envelope, and dropped into a collection box by program nurses. Telephone interviews were conducted in a private office, and participants were asked to confirm they were in a private environment to avoid being disrupted and to be able to speak freely. A professional transcription service was involved in transcribing the audio interview recordings. The service provided a signed non-disclosure agreement (Appendix 14). Transcriptions were de-identified to remove any identifying information, and a pseudonym (e.g., P1) was developed for analysis and publication. Only the researcher could link the original transcription to each participant using a separate password-protected file with both participant pseudonyms and identifying information.

Consistent with Human Research Ethics requirements (National Health and Medical Research Council, 2023), hard-copy participant satisfaction survey, interview transcripts, and personal information (i.e., name and phone number) of nurses consenting to be contacted for the interview were kept inside a locked cabinet in a locked office. Electronic data files (e.g., interview record Excel spreadsheet, audio recordings, and interview transcripts) were stored in secure password-protected servers (i.e., Australian Catholic University Microsoft OneDrive, as per the university requirements for secure storage) (Australian Catholic University, 2023). As per the ethics approved study protocol, interview audio-recordings were deleted from the hand-held recorder and computer hard drive once transcription was complete. All data will be retained for at least 15 years after the thesis has been published.

4.12. Chapter Summary

This chapter has expanded on the published study protocol to provide further detail on the methods for data collection, analysis, integration, data management and ethical considerations. To explore factors that may help explain variation in participant outcomes between the intervention and control arms in the trial, and to evaluate PRiN program implementation, quantitative and qualitative data were collected from program nurses, nurse unit managers, and program facilitators, using participant satisfaction surveys, barriers and facilitators surveys on barriers and facilitators to program implementation, fidelity surveys, and semi-structured interviews with program nurses. Quantitative data were analysed descriptively, and qualitative data were analysed using content analysis (for free-text responses from the surveys) and thematic analysis (for interviews).

The next section contains three chapters with the quantitative and qualitative findings from the process evaluation. Chapter 5 presents nurses' and managers' satisfaction with, and acceptability of the PRiN program, and program fidelity. Chapter 6 explores nurses' experiences with the PRiN program and how they applied the knowledge and skills learnt in the program to their personal life and practice. Chapter 7 presents the challenges COVID-19 posed to nurses' practice and how they applied the knowledge and skills from the program to maintain their resilience and grow through these challenges.

FINDINGS SECTION

Chapter 5 – Satisfaction, Acceptability, and Fidelity Findings

Chapter 6 – Program Participants' Experiences with PRiN

Chapter 7 – Program Participants' Experiences with COVID-19

Chapter 5: Satisfaction, Acceptability, and Fidelity Findings

This chapter is the first of three chapters presenting the process evaluation findings. Here, three sets of findings are presented: i) program participant satisfaction and acceptability, ii) barriers and facilitators to program implementation, and iii) program fidelity. Participant satisfaction and acceptability findings describe nurses' perspectives on, and satisfaction with, the PRiN program. Barriers and facilitators to program implementation findings identify nurse unit managers' and team leaders' perspectives on the program and factors that hindered or supported nurses' participation in the PRiN program. Program fidelity findings assess the extent to which the programs were delivered as intended and evaluated group interactions and dynamics within the programs from the perspective of program facilitators.

This chapter addresses the thesis objectives of:

1. Describe mental health nurses' and managers' perspectives on, and satisfaction with, the PRiN program.
2. Identify barriers and facilitators to implementation of the PRiN program.
3. Identify the extent to which the PRiN program was delivered as intended.

5.1. Participant Satisfaction and Acceptability

A total of seven PRiN programs (two workshop days per program) were delivered to n = 61 participants over 13 months (between April 2021 and May 2022) during the trial. At the conclusion of the second workshop day of each of the seven programs, a hard copy satisfaction survey was completed by participating nurses that assessed their views and satisfaction with the PRiN program. These nurses completed the first workshop three weeks prior, allowing them time to reflect on their experiences of the first workshop and apply the knowledge and skills they had learnt to their lives and work. As described in Chapter 4.4 and

the study protocol (Bui et al., 2022), participants were asked to rate (on a five-point Likert scale from (1) *not at all, no use,* or *no value*, to (5) *a great deal, great use,* or *great value*) their perceptions of how they felt about the program and how they had used the skills learnt during the program (see Table 5.2 and Appendix 7). Data from Likert-scale responses were analysed descriptively and displayed with means and standard deviations. Participants were also invited to provide open-ended comments on the benefits, skills, improvements and other feedback they wished to give about the PRiN program. Open-ended comments were analysed with content analysis.

5.1.1 Descriptive Findings

A total of n = 60 nurses (out of 61 nurses in seven programs) returned the survey (response rate = 98.3%). Their demographic characteristics are presented in Table 5.1. The majority of respondents were RNs (90%) and worked in inpatient settings (75%). Approximately one-third (31.6%) of the nurses had been working in mental health for less than a year. Half of the nurses reported having received clinical supervision.

Table 5.1: Nurse Demographics (n = 60)

Gender	Male	14
	Female	46
Age	18-25	6
	25-34	23
	35-44	17
	45-54	8
	55+	2
	Missing	4
Professional Role	RN	54
	EN	6
Years working in mental health nursing	<1	19
	1-5	24
	6-10	7
	11-20	3
	21+	5
	Missing	2
Workplace setting	Inpatient	45
	Community	15
Received clinical supervision	Yes	30
	No	30
RN with specialist postgraduate mental health nursing qualification (n = 54)	Yes	39
	No	15

Note: EN, enrolled nurse; RN, registered nurse.

Overall satisfaction with the PRiN program and content (mean = 4.5/5, SD = 0.68; range = 1-5) indicates that nurses were highly satisfied with the program (see Table 5.2). Nurses' perception of the program's value for improving their communication skills had the lowest mean of 4.08/5 (SD = 0.9, range = 1-5). They found the program most valuable for developing their understanding of resilience (mean = 4.70/5, SD = 0.6, range = 3-5). The program was regarded as valuable for learning to recognise and challenge negative self-talk (mean = 4.65/5, SD = 0.6, range = 3-5) and for increasing their use of positive self-talk (mean = 4.68/5, SD = 0.6, range = 3-5). Nurses also felt the program had contributed to a more positive outlook for their future as employees in their current organisation, i.e., NWMH (mean = 4.57/5, SD = 0.8, range = 1-5).

Table 5.2: Participant Satisfaction with PRiN Program: Survey Results (n = 60)

Items	Mean (SD)	Range
How participants felt about the PRiN program.		
1. How valuable has the program been in assisting you to develop an overall sense of well-being?	4.62 (0.6)	3-5
2. How valuable has the program been in developing your understanding of resilience?	4.70 (0.6)	3-5
3. Do you feel more confident in drawing on your strengths following challenging situations?	4.48 (0.6)	3-5
4. How valuable has the program been for improving your communication skills?	4.08 (0.9)	1-5
5. Do you feel the program has contributed to you having a positive outlook for your future as an employee here?	4.57 (0.8)	1-5
6. Do you feel the program has contributed to you having a positive outlook for your personal life?	4.30 (0.6)	3-5
7. Overall, how would you rate the usefulness of the PRiN program?	4.72 (0.6)	3-5
8. Overall, how enjoyable was the PRiN program?	4.78 (0.5)	3-5
How participants used the skills learnt during the PRiN program.		
9. How valuable has the program been in assisting you to gain a greater understanding of your strengths?	4.42 (0.7)	3-5
10. How useful has the program been for you in understanding and managing your stress?	4.40 (0.7)	2-5
11. Do you feel that the program has or will assist you to deal with any stress you may experience in the future?	4.40 (0.7)	2-5
12. Do you feel that the program was valuable in assisting you to increase your use of positive self-talk?	4.68 (0.6)	3-5
13. Do you feel that the program assisted you to recognise and challenge your negative self-talk?	4.65 (0.6)	3-5
14. How valuable has the program been in helping you to utilise a more proactive problem-solving approach?	4.28 (0.8)	3-5
15. Have the skills you've learnt throughout the program been beneficial for your relationships at work?	4.35 (0.8)	2-5
Total mean (SD)	4.50 (0.68)	

Note: items for questions 1, 2, 4, 9 were ranked from 1 = no value to 5 = great value. Items for questions 3, 5, 6, 7, 8, 11, 12, 13, 14, 15 were ranked from 1 = not at all to 5 = a great deal. Items for question 10 were ranked from 1 = no use to 5 = great use.

5.1.2 Content Analysis of Open-ended Responses

From n = 60 surveys, n = 171 open-ended responses were received. Qualitative descriptive content analysis (Chapter 4.8.1) was conducted and findings presented in three main categories: *Benefits of the PRiN program*, *Valuable skills learnt from the program*, and *Improving the program*.

5.1.2.1 | Benefits of the PRiN Program. Mental health nurses found the program beneficial for gaining skills and knowledge to strengthen their resilience and improve their interpersonal communication at work and in their personal life ('*I built more resilience regarding both work and personal problems*'). The program also created an opportunity for nurses to pause and reflect on their growth from past trauma and their personal strengths:

> 'Being able to challenge my self-talk. Recognising my strengths. Also recognising the good that can come from trauma and what I have learnt.'

Nurses described gaining a better understanding of their own responses to challenging situations and how to manage themselves using the PRiN model (Figure 1.3). They experienced greater self-awareness regarding their reactions to stress, noting that '*breaking down the pathways to risk/resilience was good for identifying what was happening to myself and others in confrontational situations*.' This enhanced self-awareness helped them more effectively manage their responses and stress during challenges – one nurse identified that '*one change to body clues/behaviour/self-talk/emotions can lead to a better outcome.*'

The program was also beneficial for nurses' understanding of how to improve their relationship with colleagues through effective communication including using active listening and being empathetic. Some nurses identified better ways of avoiding or managing interpersonal conflict at work (e.g., '*looking at a situation from a different angle to*

understand where the other person is coming from'). Others mentioned that the supportive environment and group interaction during the program workshops were helpful for creating a networking opportunity with other nurses at the health service and for promoting a sense of belonging in the workplace: '*I feel like I'm part of the team, more than I did before the group*.' Nurses also found group interactions in the program and the sharing of personal stories valuable for understanding others' perspectives and respecting differences between individuals. Several nurses found their colleagues more relatable after hearing about their struggles:

> '[I had] a greater understanding of other nurses' working situations/daily challenges/traumatic work experiences. Awareness of other nurses' vulnerability, the need to be kind to one another. Awareness that we need to support each other.'

5.1.2.2 | Valuable Skills Learnt from the Program. Nurses identified several valuable skills and strategies related to stress management, self-awareness, help-seeking, drawing strength from adversity, and interpersonal communication. They considered these relevant not only to their professional practice but also to their personal life. Stress-coping strategies from the program included using thought challenges to manage negative self-talk, having a more positive outlook on difficult situations, and recognising their own strengths and values. For example, many nurses mentioned becoming more aware of their negative self-talk and consciously trying to challenge it:

> 'I find myself trying to stop when noticing I'm engaging in negative self-talk and thinking how I can change it to positive.'

Nurses used their understanding of the resilience skills in the program to devise new strategies to improve their stress management capacity. These skills included cognitive reframing to change perception of a problem (e.g., '*shift my body language/perception by just having a more positive outlook*'), being '*aware of stress and it's different presentations in the body*', self-regulation with positive self-talk or calm down techniques (e.g., '*when under pressure, I try to take a deep breath*') and drawing strength from adversity. Being reflective helped nurses recognise unhealthy coping patterns (e.g., '*thought traps*' and '*negative self-talk*') and having a deeper understanding of their '*self*':

> 'Rich life experiences that may be either positive or negative all contribute to who we become as people and how we develop, build relationships and view life.'

A few nurses referred to the posttraumatic growth (PTG) module and considered it valuable, with one nurse identifying the skills learnt included finding the positives in a challenging situation, using available support to overcome and grow from the situation, and recognising that '*vulnerabilities can be our strengths.*'

The program also provided nurses with the skills to reflect on and prioritise their personal needs, practice self-care, be self-compassionate, and seek help when needed. One nurse noted '*the feelings I have are normal and can be altered positively*', which echoed others' sentiment that '*it's alright to not be okay, it's ok not to be tough.*' Many valued the skill to speak up to ask for help:

> 'It's ok not to be ok. Reach out for help if needed. I have accessed my clinical supervision here since starting this program.'

According to nurses, the most valuable interpersonal communication skills were listening skills, open communication (e.g., '*relaxed body gesture*'), patience (especially when working with new staff), and respect for others' viewpoints:

> 'Understanding every individual is different and don't jump to conclusions without understanding and listening to their points/views.'

5.1.2.3 | Improving the Program. Nurses provided many recommendations for the inclusion or exclusion of theoretical and practical content that they felt were more relevant to them, and to improve future implementation of the program. Around three-quarters of nurses provided suggestions to improve the content of the program. Some nurses wanted a deeper discussion around theoretical aspects of resilience and resilience factors, such as '*focus on physical wellbeing as it influences mental wellbeing.*' Other suggestions included placing more emphasis on identifying '*self-strengths as a nurse and a person*', and '*self-valuing.*' Notably, one nurse '*did not find [the empathic communication role-playing activity] beneficial*' and two others suggested improvement for content related to communication skills. These comments may help explain why not all nurses were satisfied that the program helped improve their communication skills (see Table 5.2).

Nurses also recommended more group work (e.g., on communication skills and creating harmony) and team building activities that they could bring back to their workplace. A few nurses noted that the tailoring of the program to mental health nursing could be further improved, e.g., by having more clinically relevant examples specific to mental health nursing, instead of the current non-clinical examples (i.e., video excerpts from the movie '*Shrek*'), or by making changes to program activities:

> ‘I personally didn't like the role play [empathic communication] and did not find it beneficial. Empathy is something I am already extremely familiar with, but it felt 'fake' to be role-playing it.’

They also suggested inviting ‘*guest speakers who have worked and benefitted from practicing resilience.*’ Practical strategies, including challenging negative self-talk and ‘*more hands-on activities or learning of de-stressing techniques*’, were also suggested:

> ‘I feel more strategies [for solving problems] could have been discussed. We discussed more about the problems.’

A few nurses made suggestions about improving the delivery of the program. This included having annual refresher courses or ongoing short workshops to further consolidate knowledge and skills from the program, as one nurse noted that ‘*I noticed myself forgetting to use the skills at the end of the three weeks*.’ The two-day workshop design (each day spread three weeks apart) was felt to be rushed and not giving enough time to analyse the content in detail. Some nurses suggested the program could be run with nurses from similar levels of experience, and particularly with colleagues at work as *‘a good opportunity for team building and to increase feeling of belonging in the workplace.*’ With their positive experience of the program, they supported wider dissemination to nurses:

> ‘I would like it [the PRiN program] to be offered to all nurses (can be done in a shorter format/online format) as it has been an exceptional learning experience for myself. I believe all nurses would benefit from this.’

5.1.3 Summary of Findings

Nurses were highly satisfied with the program (mean = 4.5 on a 5-point Likert scale). They found it particularly valuable for enhancing their understanding of resilience (mean = 4.70/5), increasing their use of positive self-talk (mean = 4.68/5), recognising and challenging negative self-talk (mean = 4.65/5), and contributing to a more positive outlook for their future as employees in their current organisation (mean = 4.57/5). They learned several skills and strategies for effectively coping with stress, including challenging negative self-talk, cognitive reframing, using deep breathing techniques, and employing self-talk to cultivate self-compassion. Additionally, they improved their interpersonal communication through using active listening, being empathetic, and respecting others' perspectives. They also learnt to recognise posttraumatic growth they had experienced from past adversity. Further, they provided several recommendations to improve the program, including more in-depth discussions about program theories, more clinically relevant examples in mental health nursing, annual refresher courses, and wider dissemination of the program to other nurses within this organisation and other health services.

5.2. Barriers & Facilitators to Program Implementation

Following each program, surveys were completed by managers or team leaders whose staff had attended the PRiN program, to identify barriers and facilitators to nurses' participation in the program. On a five-point Likert scale from (1) *strongly disagree* to (5) *strongly agree*, managers were asked to rate whether the expectations of their role when their staff participated in the program were clear, the process of inviting staff to participate in the program was straightforward, and rostering and covering shifts for staff who participated in the program was manageable (see Table 5.3 and Appendix 11). They were also asked to rate how beneficial it was for nurses to participate in the program and whether they had noticed positive changes in the clinical practice of nurses that participated in the program. Managers

and team leaders left open-ended comments on these five closed-ended questions. They also responded to four other open-ended questions about the greatest facilitators, benefits, and challenges of nurses participating in the program, and additional comments about the process of nurses participating in the program.

5.2.1 Descriptive Analysis Findings

Out of n = 25 managers and team leaders approached during the evaluation, n = 17 returned the survey (response rate = 68%). Fourteen were nurse unit managers: 12 managing inpatient units and two managing community-based units. The remaining three were team leaders of community outreach teams. The majority of managers/leaders were female (n = 13/17). All managers and team leaders had more than 10 years of experience in mental health nursing.

The first three questions in the survey related to managers' and team leaders' involvement with the process of nurses' recruitment and participation in the program. These responses had an overall mean of 3.73 (SD = 1.04, range = 1-5), which indicates that overall managers and team leaders found the process relatively straightforward and manageable. However, there were some exceptions. For instance, one manager strongly disagreed that the process of inviting staff to participate in the PRiN resilience program was straightforward but did not leave a comment to elaborate. Three managers disagreed that rostering and covering shifts for staff who participated in the PRiN resilience program was manageable. They mentioned that '*shift rostering in general was incredibly difficult, … a product of workforce shortages and ward acuity*,' and '*at times there weren't any nurses around (no bank staff to cover regular staff)*.'

The last two questions related to the potential positive impact of the program on staff and their practice from managers/leaders' perspective. The mean scores for these questions were aggregated. The overall mean was 4.06 (SD = 1.10, range = 1-5). This score indicates that managers and team leaders perceived the program as beneficial for nurses but had yet to observe any positive changes in their practice. The reasons for lack of observed changes were not entirely clear as there were limited open-ended responses, but those that were provided related to lack of time to observe impacts. Two managers mentioned that 'I haven't seen anything yet as I have 40 staff' and 'I was on leave.' Two others hadn't had an opportunity to communicate with their staff for feedback on the program.

Table 5.3: Barriers and Facilitators to PRiN Program Implementation (n = 17)

Items	Mean (SD)	Range
Q1. The expectations of my role when my staff participated in the PRiN resilience program were clear	3.65 (1.1)	1-5
Q2. The process of inviting staff to participate in the PRiN resilience program was straightforward	4 (0.9)	1-5
Q3. Rostering and covering shifts for staff that participated in the PRiN resilience program was manageable	3.53 (1.1)	1-5
Q4. I consider it beneficial for nurses to participate in the PRiN resilience program	4.76 (0.6)	3-5
Q5. I noticed positive changes in the clinical practices of nurses that participated in the PRiN resilience program	3.35 (1.1)	1-5
Total mean (SD)	3.86 (1.1)	

Note: items were ranked on a 5-point Likert scale, from 1 = not at all to 5 = very.

5.2.2 Content Analysis of Open-ended Responses

From additional comments related to the five close-ended questions and answers to the four open-ended questions, a total of n = 105 responses were collected. Following content analysis, responses were grouped into three main categories: *Managers' perception of the*

program, *Barriers to staff participation in the program*, and *Facilitators to staff participation in the program*.

5.2.2.1 | Managers' Perceptions of the program. Several managers identified that they had very positive perceptions of the PRiN program and fully supported training to promote resilience in nursing practice. Only four managers said they were unsure about the positive impacts of the program, either because they were on leave or had not had an opportunity to speak with staff who attended the program (e.g., due to heavy workload). Most of the feedback focused on the high relevance and importance of the program as a support package for staff wellbeing and resilience. The PRiN program was viewed as important to refocus nurses' attention on continuous professional development (CPD) during COVID-19, as '*CPD opportunity wasn't emphasised during COVID-19.*' A few managers were puzzled with the low number of staff sign-up to the PRiN program:

> 'Surprised that all the nurses didn't jump in to do it. Not many people applied … Nurses don't get enough professional development opportunity.'

Managers noticed improvements in nurses' clinical practice, emotional intelligence behaviours, emotional wellbeing, interpersonal interactions, and greater confidence in stress management. One manager, referring to a nurse who completed the program, said:

> '… for one of them, I have noticed marked improvements … in her anxiety and problem-solving, and she has more emotional intelligence around different situations. She is enjoying the placement - which is a positive sign. She looks more relaxed in her role … She signed up after being recommended by the clinical team - that we recognised she would greatly benefit from the program.'

Additionally, several managers noted even greater benefits to clinical practice for junior and graduate nurses:

> 'Previously they [graduate nurses] were more reliant on the nursing leadership. The program added a few tools for them to use. Previously they were too overwhelmed to know what to do. For example, in some situations in acute inpatient units, some staff took things personally, but the PRiN program helped them realign their thinking.'

One manager acknowledged that it was important for the workforce to be reminded about resilience, and that the program was helpful for providing '*a framework*' to guide nurses' practice. Managers viewed the program as an opportunity for nurses to reflect on the work they do to '*recognise resilience and how difficult the job is*', and to have a better understanding of themselves as a clinician:

> 'Reflection on practice - the staff were trying to work out future direction in relation to their work, whether they want to stay in the community or to move back to the ward. They were reflecting on how they were feeling - about themselves and their role (rather than other people in the workplace) on what they wanted to do - it worked out quite well for them.'

Feedback reflected that the PRiN program was applicable not only to different aspects of nurses' work but also in helping them manage their work-life balance. Managers believed the program would help newly graduated and junior nurses become more mindful of their own wellbeing upon joining a new and challenging career. Given these benefits, they suggested that the program should be made mandatory as part of staff induction and ongoing annual training and support:

> ‘It's a good program. It's something that should be mandatory during staff induction. Also, something to revisit in one or two years later with up-to-date information, and to have time for ourselves.’

They suggested the program be distributed widely and offered not only to nurses but other health professionals:

> ‘It was a very positive experience. Hope it's available to everyone, it is beneficial for all clinicians, not just nurses. It is beneficial for building resilience, knowing yourself so you can improve the clinical care you provide, and to deal with challenging situations and to cope better.’

Managers perceived it would be beneficial to have the program run at each individual area mental health service (e.g., Aged Persons Mental Health Service) in the health service (as the service had six area health services which were geographically spread within the overarching service) rather than at a central location (i.e. the Training and Development Unit). They considered that offering the program at local sites would allow better connection between participating staff working in the same setting (i.e., youth and adolescent mental health setting, adult mental health setting or aged persons mental health setting) because they could relate to each other better.

5.2.2.2 | Barriers to Staff Participation in the Program. There were several barriers to staff participation in the program, including heavy work demands, staff shortages due to COVID-19, and staff lack of understanding and expectations regarding the program. Managers suggested that some staff members’ lack of interest in signing up for resilience education was ‘*due to COVID-19 being all-consuming, they [staff] didn’t feel like they could*

take on something new even though it would help in the long term.' Staff were exhausted and experiencing burnout due to heavy demands, with most shifts being busy and short-staffed:

> 'The intensity of the environment and the burnout stopped staff from signing up [to the program]. Challenges around COVID-19 demands, busy and short-staffed during shifts. Staff lacked the emotional energy to participate.'

In addition, short staffing and an increase in personal leave requests around COVID-19 times made it challenging for managers to organise staff release to attend the resilience education. A few managers reported that there was no casual workforce to draw on to replace staff, particularly in community teams where '*it's difficult to get cover staff with the right skill sets for community teams and the teams has never been able to get any bank staff*.' One manager commented that staff release for the future implementation of the program would become even more difficult as it became available to more nurses. Another manager suggested that this issue needed to be addressed at the workforce level:

> 'Shift rostering in general was incredibly difficult, but not directly related to the training [program]. It unfortunately is something I wanted to prioritise for staff to get to, however shifts were worked short and other staff had to do overtime. Again, it's more a product of workforce shortages and ward acuity.'

Another major barrier to staff participation was their lack of understanding and clear expectations of the program. Some managers were unsure if nurses had a good grasp of the program's content and purpose. Some believed that the information presented by the research team regarding the program overview was insufficient, which hindered staff participation:

> '… they [graduate nurses] selected the program without understanding the expectations, workloads, and benefits of their study (one staff thought the study would add to her workload). There probably is something around how the organisation provided the information …'

Additionally, one manager stated it was unclear '*what ownership they [participating nurses] have*' over knowledge gained from the program and whether they were allowed to share their learnings with colleagues to improve everyone's understanding of the program.

Managers and team leaders were unable to participate in the program, as the trial was targeting nurses working clinically, and managerial presence in the program could potentially affect the group dynamics and trust in program sessions. Consequently, managers were largely unfamiliar with the program content and found it difficult to promote the program to others. Additionally, managers couldn't nominate staff because the program was implemented as part of a randomised controlled trial where staff were allocated randomly to program participation (Chapter 1.8), which further complicated efforts to get staff involved:

> 'Would be good for us [managers] to have been able to nominate staff to participate. I understand this shifts the ability to adequately measure the study, however there is so much to gain that it is a shame to not have a large number of uptakes.'

One manager believed the group setting of the program (where participants discussed issues in the workplace with others) might have impacted staff sign-up to the program:

> ‘Group setting – people don’t want to discuss confidential issues (e.g., about their manager) because they fear repercussion, maybe they are concerned about trusting other people in the program.’

In addition, some managers did not notice any changes in their staff following the program, but believed the program was beneficial for nurses to reflect on their resilience:

> ‘Haven't noticed any difference [from staff who participated in the program]. There has been difficulty with my personal leave during February. I haven't spoken with the staff that went to the program. They haven't approached me either. I believe they probably did enjoy and found it beneficial. It's usual for everyone to take time out and think about resilience in all of its forms. Clinicians often enjoy getting out of the office.’

5.2.2.3 | Facilitators to Staff Participation in the Program. Some facilitators were the inverse of certain barriers. Having the capacity and organisational resources to maintain adequate staffing levels and flexibility in rostering was considered by managers to be helpful to support staff who were interested in the program. One manager suggested sequential staff release as a solution to ease rostering pressures:

> ‘Going forward, if we target the wider workforce (instead of one group, i.e., graduates) it will not be one big group coming off the roster.’

Another important factor that facilitated staff participation in the program was the organisation’s commitment to nurses’ continuous professional development (CPD), and to resilience education as an important form of CPD at the health service. Despite the pressure of COVID-19 on staffing levels and rostering, managers endeavoured to prioritise staff

education because '*any further training is essential*.' Several managers emphasised that the team and health service put value on resilience and the development of nurses, and acknowledged the need for resilience education in the field:

> 'Increased resilience is fundamental to the ongoing strength and growth of the team. It supports maintaining of staff numbers, staff morale, wellbeing, capacity to manage stress, job enjoyment, and better ability to prioritise work-life balance.'

Managers reported that PRiN information sessions (by the research team) and discussions among the staff were instrumental to raising awareness and interest. These included clinical nurse educators, senior nurses, and managers '*talking about it [PRiN program] at huddles [brief staff meetings before shift to discuss safety issues].'* Program nurses and senior nurses (e.g., clinical nurse educators and clinical nurse consultants) could help their colleagues understand the impact of the program by providing feedback, sharing knowledge, and discussing what they gained from the program. This may have encouraged more nurses to sign up for the program:

> 'The more we talk about it, the more people will sign up. There was one conversation I had with staff at the nursing station about the study - staff said, "I would have signed up if I knew"…'

In addition, given the impact of heavy work demands and fatigue that limited nurses' capacity for professional training activities, managers suggested that '*it needs to be clear what staff get out of the program*.' They suggested nurses could receive a detailed overview of the program (what the staff would be learning, the objectives, what they would be working on) and examples on what they could gain from the program to show that '*the program's*

content was beneficial, meaningful and relevant to them.' The program should be framed as '*the opportunity [for nurses] to reflect on their work, and to feel appreciated*.'

They suggested offering the program to senior nurses (managers, associate nurse unit managers, and senior staff) so they could promote and disseminate the program:

> 'Why not offer this program to NUM [nurse unit manager] and ANUM [associate nurse unit manager] levels? … so they have the insight to go out and promote the program to their staff.'

In addition, managers '*should [be able to] advocate for staff to participate and to nominate which staff to participate*.' For instance, they should be able to identify junior staff whose nursing practice and wellbeing would greatly benefit from the program

5.2.3 Summary of Findings

Findings from the barriers and facilitators surveys completed by nurse unit managers and team leaders indicated that most strongly believed in the benefits of the PRiN program (mean = 4.76/5) and fully supported its implementation. Some noticed improvements in nurses' stress management capacity and clinical practice following the program (mean = 3.35/5). Some also identified several barriers to nurses' participation in the program: heavy work demands, which impacted nurses' capacity to engage in professional development activities; staff shortages, which made it difficult for managers to organise staff release to attend the program; and a lack of understanding and clear expectations regarding the program, which reduced nurses' eagerness to participate. Conversely, they believed that program implementation could be facilitated by the organisation's commitment to improving nurses' professional development, wellbeing, and resilience. This included the organisation providing additional resources to maintain adequate staffing levels and flexibility in rostering,

so that nurses could be released from shifts to attend the program. Further, they suggested that managers, senior nurses, and nurses who had already completed the program could encourage others to participate.

5.3. Program Fidelity

As discussed in Chapter 4.4, the fidelity survey was originally developed by the program developers for previous iterations of the resilience program and modified by the research team for the PRiN trial. The survey was completed for each program by the program facilitators to identify the extent to which the PRiN program was delivered as intended and included facilitators' perception of program usefulness and participant engagement with program content. For each content unit within each session (see Table 1.1 and Appendix 13), facilitators used the checklist to rate the level of completion as 'yes', 'yes in part' or 'no', and rated the components as (1) *not at all useful*, (2) *somewhat useful*, (3) *neutral*, (4) *mostly useful*, and (5) *very useful*. They also rated the level of overall group engagement as (1) *not at all engaged*, (2) *somewhat engaged*, (3) *neutral*, (4) *mostly engaged*, and (5) *very engaged*. Open-ended responses of each content unit addressed how the unit was received by nurses, whether there were any process issues with delivery of the unit or activities, and any other comments about environmental factors affecting program delivery. Facilitators could also leave general comments (e.g., about the venue, catering, and technical issues) that were not specific to any content unit.

5.3.1 Descriptive Analysis Findings

All seven facilitators contributed to completing the fidelity survey. All were experienced mental health nurses with > 5 years clinical experience. Most facilitators were female (n = 5/7). Two were senior mental health nurse educators with more than 10 years of

experience as educators. The remaining five facilitators had less than five years of experience as educators.

From the 23 content units that made up six modules for each program, a total of 161 content units were intended to be delivered across the seven programs. Of those, 153 units (95%) were reported as fully delivered, seven units (4.4%) were partially delivered, and one unit (0.6%) was not delivered (Table 5.4). Most notably, content unit 4.2 (i.e., *Practice empathic communication*) had the lowest level of completion - it was fully completed in only three of the seven programs, partially completed in three of the seven programs, and not completed in one program (see Chapter 5.3.2.1 for reasons).

Table 5.4: Level of Completion

Module and segment		Program							Completion rate (%)
		1	2	3	4	5	6	7	
1 – We can all be resilient	1.1	Y	Y	Y	Y	Y	Y	Y	28 Y (100%)
	1.2	Y	Y	Y	Y	Y	Y	Y	
	1.3	Y	Y	Y	Y	Y	Y	Y	
	1.4	Y	Y	Y	Y	Y	Y	Y	
2 – Cool and calm: understanding and managing stress	2.1	Y	Y	Y	Y	Y	Y	Y	35 Y (100%)
	2.2	Y	Y	Y	Y	Y	Y	Y	
	2.3	Y	Y	Y	Y	Y	Y	Y	
	2.4	Y	Y	Y	Y	Y	Y	Y	
	2.5	Y	Y	Y	Y	Y	Y	Y	
3 – I am what I think and I can change what I think	3.1	Y	Y	Y	Y	Y	Y	Y	28 Y (100%)
	3.2	Y	Y	Y	Y	Y	Y	Y	
	3.3	Y	Y	Y	Y	Y	Y	Y	
	3.4	Y	Y	Y	Y	Y	Y	Y	
4 – Promoting positive relationships	4.1	Y	Y	Y	Y	Y	Y	Y	10 Y (71%) 3 YIP (22%) 1 N (7%)
	4.2	YIP	Y	N	Y	YIP	Y	YIP	
5 – Managing conflict and drawing strength from adversity	5.1	Y	Y	Y	Y	Y	Y	Y	26 Y (93%) 2 YIP (7%)
	5.2	Y	Y	Y	YIP	Y	Y	Y	
	5.3	Y	Y	Y	YIP	Y	Y	Y	
	5.4	Y	Y	Y	Y	Y	Y	Y	
6 – Putting it all together	6.1	Y	Y	Y	Y	Y	Y	YIP	26 Y (93%) 2 YIP (7%)
	6.2	Y	Y	Y	Y	YIP	Y	Y	
	6.3	Y	Y	Y	Y	Y	Y	Y	
	6.4	Y	Y	Y	Y	Y	Y	Y	
Total		22Y	23Y	22Y	21Y	21Y	23Y	21Y	153 Y (95%)

	1YIP 0N	0YIP 0N	0YIP 1N	2YIP 0N	2YIP 0N	0YIP 0N	2YIP 0N	7 YIP (4.4%) 1 N (0.6%)

Note: Y = yes, YIP = yes in parts, N = no; n = 7.

Facilitators rated the perceived usefulness of 161 units across seven programs using a 5-point Likert scale. Of the 161 units, 129 units (80%) were rated as *very useful*, 21 units (13%) as *mostly useful*, one unit (0.7%) as *neutral*, and 10 units (6.3%) were not rated. Similarly, facilitators assessed the level of group engagement for the same 161 units. One hundred and sixteen units (72%) were rated as *very engaged*, 27 units (16.8%) as *mostly engaged*, 12 units (7.5%) as *neutral*, one unit (0.7%) as *somewhat engaged*, and five units (3%) were not rated (denoted as '-' in Table 5.5).

Facilitators rated Module 2, *Cool and calm: understanding and managing stress*, as the least useful (mean = 4.77/5, SD = 0.29; range = 4-5) and Module 5, *Managing conflict and drawing strength from adversity*, as the most useful content (mean = 4.96/5, SD = 0.09; range = 4-5). They also reported that participant engagement with the program content was the lowest (mean = 4.21/5, SD = 0.94; range = 3-5) in the last module of Workshop Day 2, i.e., Module 6, *Putting it all together*.

Conversely, participant engagement with the program content was the highest (mean = 4.93/5, SD = 0.19, range = 4-5) in Module 4, *Promoting positive relationships* (the first module of Workshop Day 2). Thus, Module 4 had the lowest level of completion with only 10 out of 14 content units (71%) fully completed but was the most engaging content for the participants.

Table 5.5: Perceived Content Usefulness

Module and segment		Program							Mean (SD)
		Prog 1	Prog 2	Prog 3	Prog 4	Prog 5	Prog 6	Prog 7	
1 – We can all be resilient	1.1	4	5	5	5	5	-	5	4.83 (0.41)
	1.2	4	5	5	5	5	-	5	
	1.3	4	5	5	5	5	-	5	
	1.4	4	5	5	5	5	-	5	
2 – Cool and calm: understanding and managing stress	2.1	4	5	5	5	5	5	5	4.77 (0.29)
	2.2	4	5	5	5	5	5	5	
	2.3	4	5	5	5	5	5	5	
	2.4	4	5	4	4	5	4	5	
	2.5	5	5	4	5	5	5	5	
3 – I am what I think and I can change what I think	3.1	4	-	4	5	5	-	5	4.79 (0.40)
	3.2	4	5	5	5	5	-	5	
	3.3	4	5	5	5	5	-	5	
	3.4	4	5	5	5	5	-	5	
4 – Promoting positive relationships	4.1	5	5	5	5	5	3	5	4.86 (0.38)
	4.2	5	5	5	-	5	5	5	
5 – Managing conflict and drawing strength from adversity	5.1	5	5	5	5	5	5	5	4.96 (0.09)
	5.2	5	5	5	5	5	4	5	
	5.3	5	5	5	5	5	5	5	
	5.4	5	5	5	5	5	5	5	
6 – Putting it all together	6.1	5	5	5	5	5	4	5	4.89 (0.20)
	6.2	5	5	5	5	5	4	5	
	6.3	5	5	5	5	5	5	5	
	6.4	5	5	5	5	5	5	4	
		Overall mean							
		4.53	5.00	4.89	4.97	5.00	4.51	4.96	4.84 (0.22)

Note: 5-point Likert scale. 1 = not at all to 5 = very; n = 7. Missing data denoted as '-'.

Table 5.6: Participant Engagement with Program Content

Module and segment		Program							Mean (SD)
		Prog 1	Prog 2	Prog 3	Prog 4	Prog 5	Prog 6	Prog 7	
1 – We can all be resilient	1.1	4	3	4	5	4	5	5	4.54 (0.37)
	1.2	4	5	5	5	5	5	5	
	1.3	4	5	5	5	5	5	5	
	1.4	4	5	4	5	4	2	5	
2 – Cool and calm: understanding and managing stress	2.1	4	5	5	5	5	5	5	4.80 (0.28)
	2.2	4	5	5	5	5	5	5	
	2.3	4	5	5	5	5	5	5	
	2.4	4	5	4	5	4	5	4	
	2.5	5	5	5	5	5	5	5	
3 – I am what I think and I can change what I think	3.1	4	5	5	4	5	5	5	4.71 (0.37)
	3.2	4	5	5	5	5	4	5	
	3.3	4	5	5	5	5	5	5	
	3.4	4	5	5	5	5	4	4	
4 – Promoting positive relationships	4.1	5	5	5	5	5	4	5	4.93 (0.19)
	4.2	5	5	-	5	-	5	5	
5 – Managing conflict and drawing strength from adversity	5.1	5	5	5	5	5	3	5	4.74 (0.25)
	5.2	5	5	5	5	5	5	-	
	5.3	5	5	5	5	5	5	5	
	5.4	5	5	3	5	3	5	4	
6 – Putting it all together	6.1	5	5	3	5	3	3	4	4.21 (0.94)
	6.2	5	5	3	5	3	4	5	
	6.3	5	5	3	5	3	3	5	
	6.4	5	5	-	5	-	5	5	
		Overall mean							
		4.53	4.92	4.47	4.96	4.47	4.42	4.83	4.66 (0.24)

Note: 5-point Likert scale. 1 = not at all to 5 = very; n = 7. Missing data denoted as '-'.

5.3.2 Content Analysis of Open-ended Responses

Content analysis was completed for n = 149 open-ended responses and led to two main categories and four sub-categories related to program fidelity and participant engagement with the program.

5.3.2.1 | Program Fidelity. Facilitators provided an explanation as to why some content was not fully completed. Several facilitators noted that empathic communication was '*only very briefly discussed*' because the content was *'naturally incorporated by participants in early discussions.*' In addition, participants felt activities around empathic communication

'*were not needed for mental health nurses as it's part of their daily practice*' and thus facilitators chose not to complete the activity. As a result, only three out of seven programs fully completed the content unit *Practice empathic communication* of Module 4.

Similarly, in Session 5: *Managing conflict and drawing strength from adversity*, some activities were merged or *'semi-skipped due to answers already given.'* In Program 7, in Module 5, *Managing conflict and drawing strength from adversity*, responses to the activity *How I've grown* were not discussed and facilitators stated it was due to the *'personal nature of the exercise.'* In Program 3, facilitators reported participants *'preferred not to share responses'* to promoting a sense of belonging activity, which asked them to identify resources to increase their sense of belonging at work and in the wider community, because *'the questions were too private.'*

5.3.2.2 | Perceived Participant Engagement. Overall, participants with various levels of seniority (e.g. '*from ANUMs* [Associate Nurse Unit Managers] *to postgrads*' or '*graduate transition to experienced mental health nurses*'), work settings (e.g. '*IW* [Inner West Area Health Service] *with Orygen*'), and '*levels of life experience*' were perceived by facilitators to be actively and enthusiastically engaged in group discussions. Facilitators noted good use of humour during discussions. At times, longer conversations turned into complaining and facilitators had to '*gently bring [the conversation] back to mental health nursing*.' Most participants readily shared their resilience stories without prompting. These were stories of '*being calm in stressful situations*' and '*stories from international nurses about stress*.' Within the safe and supportive environment of the program, they were able to be vulnerable with their peers:

> ‘Pleasant group dynamics. People were respectful and willing to provide level of self-exposure. Participants stated they felt safe and comfortable to express ideas.’

Some participants were new to the PRiN model (Figure 1.3) and idea of resilience but were able to understand and apply the model in discussions and activities around managing stress, challenging self-talk, and managing conflict. They drew upon personal experiences and strategies of stress management (e.g., ‘*candles*’, ‘*gym*’, and ‘*music*’) and interpersonal conflict management (e.g., ‘*getting coffee, checking in with team, listening and being available’*). The discussions and activities provided an opportunity for self-reflection (e.g., on activities and hobbies that sustained their wellbeing), with facilitators believing that the program encouraged participants to practice more often what they already knew or provided additional resources that were ‘*seen as part of their tools from now on*’.

5.3.2.2.a | Barriers to Engagement. Facilitators noted several factors that might impact participant engagement with program content. They felt nurses’ ‘*attention span was dwindling*’ towards the end of the workshop because ‘*participants were tired*.’ Some programs had smaller numbers of participants, and the smaller group size ‘*made conversation/activities more challenging*’ and it was ‘*hard work to draw on examples.*’ Participant engagement also varied depending on the group mix where some nurses might be more vocal and engaged compared to others. Some participants were unfamiliar with some of the example videos and stories provided (e.g., excerpts from the film ‘*Shrek*’), or were triggered by the content, but this was used by facilitators to discuss resilience:

> ‘Some resistance to the mule story [Shrek video excerpts], animal cruelty was mentioned, and it was related to the unending stream of angry clients and rage

on the wards [Inpatient Units] - led to a good conversation about wellbeing and the WeCare system [a system designed to improve the hospital's culture by encouraging anonymous reporting of disruptive behaviours among staff]'.

5.3.3 Summary of Findings

The program was delivered with strong fidelity (95% of content fully delivered), with minor changes to content delivery mainly involving empathic communication activities not fully completed in four of the seven programs. Overall, participants enthusiastically engaged in group activities and discussions to share their personal experiences regarding stress and conflict management. Program delivery was influenced by group size and mix; it was more challenging to facilitate in-depth discussions in smaller groups.

5.4. Chapter Summary

This chapter presented findings from a descriptive analysis and content analysis of quantitative and qualitative data on program participant satisfaction and acceptability, barriers and facilitators to program implementation, and program fidelity. The program was found to be feasible and acceptable with high participant satisfaction (mean = 4.5/5). There was strong fidelity (95% content fully completed) with high participant engagement. Barriers to program participation included heavy work demands, staff shortages, and a lack of understanding and clear expectations about the program. Conversely, facilitators of program participation included the organisation's willingness and commitment to release staff from shifts and support their wellbeing and professional development, and encouragement from senior staff to participate.

These findings are used in the mixed methods integration (Chapter 8) to generate overall conclusions (meta-inferences) to address the first thesis aim. These findings were also

summarised, along with those in the next two chapters, into two overall conclusions to address the second thesis aim - to evaluate the PRiN program implementation (Chapter 9.3). The next chapter presents the findings from qualitative semi-structured interviews of participant experiences in the program.

Chapter 6: Program Nurses' Experiences with PRiN

6.1. Chapter Introduction

Thematic findings from a total of 20 semi-structured interviews with program participants are presented in this and the following chapter and address relevant thesis objectives.

Specifically, this chapter addresses the thesis Objective 4:

- Explore and describe mental health nurses' experiences of the PRiN program, and how they applied the knowledge and skills learnt in the program to their personal life and practice.

As stated in Chapter 4.3.4, all nurses who completed the PRiN program were eligible for a follow-up semi-structured phone interview and were invited to participate. Of the 61 nurses from seven completed programs, 38 consented to participate in an interview. For each of the programs, up to three consenting nurses were randomly selected using a random number generator, resulting in a total of 20 interviews conducted across the seven programs.

Participants were interviewed between two and six weeks after the program, except for one participant who was interviewed 11 weeks after program completion due to a scheduling delay. The interviews lasted between 21 to 54 minutes with an average of 30 minutes. Participants were asked four main questions about their experiences of the program, the most helpful components of the program, and how the program impacted upon them personally and on their nursing practice. To recap, the program provided nurses with resilience skills and strategies to effectively navigate workplace and life challenges and manage stress. These skills and strategies included cognitive skills including reappraising difficult workplace situations and challenging unhelpful self-talk, emotional skills including

approaching problems with greater calmness and self-regulation of emotions, and relational skills including developing stronger relationships with others, and developing a stronger sense of belonging within the workplace. Interview data were analysed using Braun and Clarke's (2006) approach to thematic analysis. Details of how this analytic approach was applied are in Chapter 4.8.2.

6.2. Findings

Sample characteristics are provided on page 1738 of Publication 3: Mental health nurses' experience of resilience during COVID-19: A qualitative inquiry (see page 177 of the thesis). Of the 20 interviewed nurses, 14 (70%) were female, and six (35%) nurses were aged under 35 years. A quarter had less than one year of experience working in mental health. There was one enrolled nurse and 19 registered nurses (13 of whom had a specialist postgraduate mental health nursing qualification). Most nurses (n = 14, 70%) worked in inpatient settings and had previously received clinical supervision (n = 12, 60%).

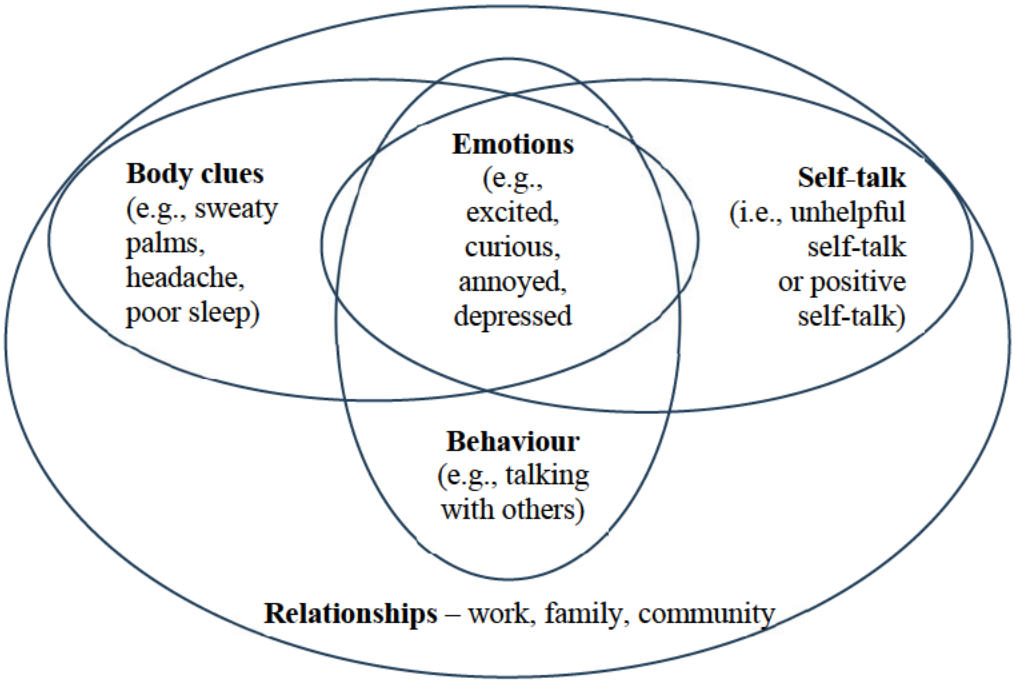
Three main themes were generated from analysis: *Reflecting on resilience and posttraumatic growth; Using resilience skills;* and *Sharing resilience knowledge with others*. Participation in a resilience program was viewed by most nurses as an important part of their professional training and development. A few nurses also viewed the program as the health service's commitment to supporting staff wellbeing and practice, which enhanced their feelings of being valued and cared for by the organisation:

> 'It was good that this program exists, and it is being researched … to promote how we can improve our everyday work-life. And the fact that [the organisation] offered it for free … with a lot of [other continuous professional

activities], we have to pay out-of-pocket ourselves … It makes us feel that we are being cared for in this industry, [by the organisation].' (P11)

Nurses referred to the PRiN Model © on several occasions, e.g., when discussing their understanding of resilience following the program or when identifying effective cognitive, emotional and behavioural strategies to cope with stress.

Figure 6.1: The PRiN Model ©, Shochet and colleagues, Queensland University of Technology (Shochet et al., 2019)



Most nurses wanted regular refresher workshops to review their use of resilience skills, '*with the participants who were in my little group … six months or a year down the track*' (P3).

6.2.1 Theme 1: Reflecting on Resilience and Posttraumatic Growth

This theme describes the experiences of MHNs in learning the concepts of resilience and posttraumatic growth (PTG) from the program. Nurses acknowledged that the program allowed dedicated time and space to reflect on and consolidate their understandings of resilience. They also explored the application of resilience to their personal life and clinical work. By gaining a better understanding of resilience, nurses felt more confident in their ability to cope with stress:

> 'I feel my self-perception has improved … I have more faith in myself … reassured that I have the skills … to tackle the tricky things that come up at work and not to panic … just taking a moment to just walk away and take some deep breaths …' (P9)

The reflective aspect of the program was likened to Socratic questioning where '*there is no particular answer, and one question leads to another*' (P1). This approach aligned with the strengths-based focus of the program, where, instead of receiving direct answers to the problem, program nurses engaged in open-ended discussion based on questions posed by facilitators. This method allowed them to identify and leverage their existing strengths to develop their own solutions.

One participant remarked *'[the program] was new to me, I haven't experienced a program like this before … the skills were* [transferable], *could be used at home and at work'* (P3), and another participant said, '*it was actually my first time learning about resilience at worksite'* (P18). The three-week gap between the two program workshops and the follow-up homework text messages (i.e., 'booster' activities; see Chapter 1.7) were helpful for participants to reflect on their use of resilience skills '*at home or at work*' (P3) during this

time. The face-to-face format, small peer group size of *'six to eight nurses*' (P19), and a supportive, non-judgmental, and confidential environment were conducive to '*exploring issues at a deeper level*' (P6). As one participant noted, '*it was paramount to the course that we did it face-to-face*' (P6). Another commented:

> 'Nurses, and people in general, need human contact … we're working with humans at the end of the day, not with robots. It's different learning online and it's different learning face-to-face. You shouldn't lose the human touch [face-to-face].' (P11)

Nurses readily shared their experiences of overcoming past adversity within the group and were able to view their experiences through the lens of the PRiN model (Figure 6.1). For example, one nurse recounted his experience with collegial conflict during back-to-back team meetings. He referred to the model when explaining how he used his physical body clues of anxiety (such as muscle tension and teeth clenching) as the prompt to take time out for a walk to de-stress. Another nurse, who was completing a Master in Mental Health Nursing, spoke about identifying the body clues of stress related to her studying and actively working to manage her stress level:

> 'I am currently studying my Masters … I was getting fatigued and going to burn out … so I put the brake on and relaxed … knowing I didn't need to push that hard, which I absolutely did last year … I was more aware of my body clues, listen to them … and not to overwork' (P8)

Reflecting on their experiences of overcoming adversity enabled them to recognise their own resilience in the face of various work and life challenges:

> ‘Sometimes you don’t recognise that you’ve been resilient in the past … during the course, you think back to a very stressful time and what you did, to realise that you do have a lot of resilience or skills to cope, but it just wasn’t recognised as that at the time …’ (P13)

Each nurse developed their own understanding of resilience. Following the program, resilience was understood by them as ‘*being able to come out the other end despite adversity*’ (P9), ‘*bouncing back and facing adversity to grow and learn in a healthy way*’ (P4), ‘*recognise what’s happening and how to respond in the best way*’ (P13), or ‘*not giving up easily*’ (P12). Several resilience factors were identified by participants, including work-life balance, cultivating self-compassion, recognising and drawing on support from friends and colleagues, and having supportive work and home environments. However, not all participants who completed the program seemed to have a clear understanding of resilience and the PRiN model (Figure 6.1), the preventive nature of the program, and the context in which resilience skills could be applied in practice. As one nurse explained:

> ‘I got physically threatened by my patient, and it was very intimidating … I escalated to the nurse in charge … and tried to use the PRiN model but it didn’t work … I think building resilience is effective to an extent, but sometimes it’s more than that … the PRiN model feels like trying not to acknowledge your emotions and then correct it as ‘you shouldn’t be feeling that way.’ (P14)

In addition, some nurses felt that building personal resilience at work through skills learnt in the program was only helpful for ‘*dealing with frustrations with the day-to-day demands at work as a clinician*’ (P11) and would not address larger structural workplace

challenges such as '*toxic environments in nursing*' (P3), heavy workloads, conflicts with management, and a perceived lack of appreciation from management. They identified that these structural challenges, along with the potential for greater benefits in other jobs ('*perks too good to miss, like working from home once a week.*', P13), could mean some of them would choose to leave their current organisation:

> 'The other day, we were talking about changing the format of the paperwork. Management has a different view, but I'm on the floor and know [it wouldn't work] … [management] are making these rules when they don't know how we're working on the floor. That's why we have been clashing with management … people didn't want to say anything and just quit … we did mention [conflict resolution] in the [PRiN] program, but I think we probably need something bigger than that.' (P11)

The program's theories on resilience were viewed by participants as applicable for nurses across all levels of experience. A few who were senior nurses reported a greater familiarity with the theories behind the PRiN model than less experienced nurses: '*I've been a nurse for a very long time … some of the concepts weren't brand-new to me*' (P6). They also related the model to different aspects of their therapeutic work: '*path to resilience reminded me of CBT [cognitive behavioural therapy]*' (P4), and to different ways cognitive-behavioural techniques could also be applied to themselves. Graduate or junior nurses, on the other hand, were less familiar with the program's theories. Further, a key component of the program, posttraumatic growth (PTG), was a new concept for several nurses:

> 'I never really thought about posttraumatic growth … the concept is relatively new to me, and it makes perfect sense … I've been separate from my parents

> for almost three years … because of the pandemic … what I've learnt from this very difficult period is that I'm stronger than I thought I was. I used to cry every day. I used to crumble down … what has changed is how I'm responding to this adverse episode in my life … I learnt to move on.' (P7)

They learnt about PTG (positive changes from the process of recovery from traumatic experiences) through the program and how they could '*find new meanings*' (P7) from traumatic experiences. Nurses described posttraumatic growth as '*the opposite of PTSD [posttraumatic stress disorder]*' (P19), '*getting back to normal [after trauma]'* (P17), a '*process of learning to overcome crisis*' (P18), and '*focus on the positives of trauma, of being stronger and more resilient*' (P16).

The traumatic experiences that nurses previously encountered at work and in their personal life included being bullied at school, being the carer for an ex-partner who attempted suicide, and struggling with vicarious trauma after a consumer at work committed suicide. In the program, after considering these traumatic experiences they reflected on associated positive growth they experienced, which included a greater appreciation for life (e.g., '*to utilise my time properly because you never know what's coming next minute*', P12), personal strength (e.g., gaining the feeling that they were capable of overcoming any kind of crisis), and improved relationships (e.g., feeling more connected with their work colleagues due to the shared experience of COVID-19). The PTG component and group discussion helped them identify these positive changes and recognise them in future challenges.

6.2.2 Theme 2: Using Resilience Skills

This theme illustrates how nurses applied the resilience skills from the program to their clinical practice and personal life to cope with stress and challenges. They applied

resilience knowledge and strategies to effectively cope with stress at work and home, enhance their nursing practice with consumers, and improve their interpersonal relationships (e.g., with colleagues and family). This also contributed to a more positive outlook on their job, with one participant stating: '*it [the program] gave me more strength to stay in this career longer*' (P18).

At work, they used cognitive skills (i.e., cognitive reframing and challenging negative self-talk) in several demanding situations including '*working in the high dependency area where people were refusing medication*' (P4) and managing '*physically aggressive consumer*s' (P17). They also reported having a higher level of awareness of their own emotions, *'being in tune with the body clues [of stress]'* (P4), and being able to use relaxation techniques (deep breathing, time out, and journaling) to self-regulate their stress and anxiety:

> 'We have a particularly challenging client that shows up regularly [at the community clinic] … before, I would just be overwhelmed, and my stress levels would be very high. Now, I've got the awareness and the tools to afford myself a few minutes, to take a couple of breaths and think about what to do.' (P9)

Several nurses found the cognitive-behavioural skills and emotional self-regulatory strategies learnt in the program to be useful for regaining and maintaining empathy when working with consumers with provocative or abusive behaviours. They could reflect and recognise emotional triggers at work (e.g., '*racism*', P18), how they reacted in the past, and how they should respond appropriately: '*when you're dealing with antisocial behaviours, it's been very helpful to think in a different way*' (P16). For instance, one nurse used self-talk to manage despondency around her work with consumers with dual diagnosis and relapse, by

acknowledging that '*I have tried my best, but their* [consumers] *recovery still requires time*' (P14). In their therapeutic engagement with consumers and carers, some nurses employed cognitive and emotional self-regulatory skills (e.g., using cognitive reappraisal to reframe the situation and self-reflecting to identify their current emotions and manage their responses) to navigate *transference* (i.e., when the client projects their feelings about someone else onto the clinician) and *countertransference* (i.e., when the clinician displaces personal thoughts and feelings onto the client) and not to take others' behaviour personally:

> 'Let's say somebody is irritable and they're snapping at me. There is a transference of anger towards me … they're angry at something but I'm the first person they see. I can say, "Right, I see you're angry, can we talk about it?" and not taking it personally because I know I haven't done anything to this person to cause this… they would say, "I'm really sorry. I wasn't angry at you, it's just that I was frustrated at something else." It helps to open the door to the real issue.' (P5)

Interpersonal skills (e.g., active listening and empathetic communication) revisited in the program were useful for nurses' communication with both consumers and colleagues:

> '… [it's helped me] reframe some of my own thinking about how I interact with others. To stop and think, "Well, what's actually happening and what's the best way to approach this?" rather than jump into arguments with other staff. Those [arguments] happen because we're all passionate individuals, all want the best for our consumers … clinical reviews sometimes get a bit heated …' (P8)

Some nurses also applied these interpersonal skills to improve their interaction with friends and family. One nurse found using skills from the program had facilitated deeper and *'powerful'* (P1) conversations with their son, which positively *'altered'* the relationship with them. Another nurse became better at noticing body clues of others to recognise signs of stress:

> 'I came home and noticed that my husband seemed distressed … He said he was fine, but his body clues said otherwise. So, I asked again and got a different response … whereas in the past I might have gone away … reflecting on that led me back to the training [PRiN program].' (P15)

Aside from applying resilience skills learned from PRiN in practice, nurses at both junior and senior levels reported using these skills to aid their professional development. For example, being aware of their own negative self-talk and being able to challenge negative thoughts were helpful in managing self-doubt and gaining more confidence with their clinical skills '*because I know how to cope with stress*' (P2). One junior nurse managed the anxiety of being in a clinical leadership role:

> '… coordinating the ICU [Intensive Care Unit] … with just six months of experience', by 'knowing my own pattern of thoughts … catastrophising process … and knowing where to modify to change the outcome' (P18).

Another junior nurse recalled a similar situation:

> 'I did not hesitate to be the ICA [intensive care area] leader … I can be tough, and I didn't use to be … I'm more confident … when the consumer became

> very abusive, I didn't take it seriously … I know how to deal with it inside my mind, so it did not affect me badly.' (P2)

Several nurses viewed the proactive practice of taking care of their wellbeing (e.g., self-care) as instrumental to the development of resilience in practice. For example, they found the program '*brought self-care to the forefront of [nurses'] mind … [and provide] more tools to [self-care] in an active way*' (P9) so nurses could '*be the best version [of themselves]'* (P13) when facing workplace challenges. Some nurses acknowledged that mental health nurses in general were not good at taking care of their own wellbeing:

> 'I find people are often very resistive to [self-care] that contributes to your practice and being a good clinician … it is not embedded in your practice, in undergraduate training, to have supervision and self-reflection … [self-care] doesn't come naturally within the job. I think younger and more junior nurses are more open-minded across that self-care aspect and work-life balance.' (P9)

Wellbeing activities nurses used ranged from leisure activities, e.g., '*go to church … read a book … catching up with family*' (P11) or '*gardening*' (P16), to maintaining '*work-life balance*' and debriefing and talking with supportive friends, family, and colleagues (P9). Some nurses suggested it would be helpful to regularly engage in clinical supervision and have resilience-based reflective practice sessions:

> 'I think it's a good program … we could also do more clinical supervision and more reflection throughout the day on our day-to-day work, to see how we can improve [our practice].' (P11)

The program also served to remind nurses to '*walk the walk and talk the talk*' (P6) and use their therapeutic knowledge for their own benefit, including being self-compassionate about their practice to avoid burn-out:

> '… there was an incident at work where a person committed suicide … to keep myself in good spirits, to reflect and move forward … I talked to family, friends, or work colleagues if I needed a chance to debrief, doing exercise … sometimes I thought "I should have done this, should have done that …" when I really should have thought, "No, I did everything I could at that time …".' (P5)

By experiencing how practical and useful these resilience skills and knowledge were for their professional practice and personal lives, nurses felt more confident in coping with stress and overcoming future challenges.

6.2.3 Theme 3: Sharing Resilience Knowledge with Others

This theme highlights how MHNs shared knowledge they had gained from the program with colleagues and consumers to help them build and maintain resilience. Having recognised the value of the program for their own resilience, wellbeing, and clinical practice, many nurses wanted to share their learning with others: '*when we did our training, it was for us to share with our group*' (P8). They used the PRiN model as a framework to further develop their existing knowledge on resilience and to have '*a language to use to approach someone at work ... and talk about ways that they can cope, with a focus on resilience*' (P9). For example, some nurses were able to draw on the PRiN model (Figure 6.1) to coach their colleagues with how to deal with the aftermath of stressful or potentially traumatic experiences:

> ‘ … seeing my colleagues going through [consumer suicide] … I can be that person in the debrief that helps to lift everyone up, not necessarily to their happy, perky selves before the incident … but giving them the tools, allowing them to think and say to themselves, “Maybe I can do this, maybe it’s not as bad as I make it out to be. Maybe I do have good support and good tools in place to keep myself and others OK.”’ (P5)

In addition to supporting their colleagues to build and maintain resilience, many nurses applied the knowledge and skills learnt from the program into their practice and therapeutic work with consumers. They coached consumers to learn to recognise their own resilience and use relevant cognitive strategies (e.g., thought challenges) to cope with stressful situations or to self-regulate their emotions:

> ‘With consumers who seemed to really struggle [with conflicts] … I discussed with them, “what are your thoughts saying?” They said “My thought process is they don’t understand, they never will. It kind of goes negative.” Then I said “Have you challenged that thought? If they don’t understand but they’re listening, maybe it’s about rephrasing.” … Then they said, “now I feel a bit better.”’ (P5)

One nurse also explained how she planned to incorporate her understandings of posttraumatic growth into her clinical practice ‘*to promote a sense of hope*’ (P7):

> ‘We ask our clients about trauma all the time, but I never really thought about posttraumatic growth. I think we all have experienced that … one day I’ll be able to convey that to my clients who’ve been through trauma … that it could be a pathway to becoming better.’ (P7)

Some nurses mentioned that the '*word of mouth to promote [the program] to other colleagues*' (P11) from nurses who had completed the program was crucial to raising interest in the program and in resilience, and to address '*stigma around building resilience for nurses*' (P14) that might be present:

> 'I came back to the team, told them what the workshop was about … Everybody agreed it was necessary for nurses to focus on resilience … I don't think anybody had anything negative … sometimes when you talk about this, some might say, "it's a waste of time and money, different initiatives come and go, flavour of the month." There was none of that attitude.' (P6)

Some suggested the program should be implemented more widely for other nurses. One nurse specifically proposed that their practice could be better sustained by creating a community of practice focused on resilience:

> 'We can use this opportunity to form a community, not just rely solely on the program to be more resilient. If there is a community that is active, we can help each other and prolong the effects from the program … we can always get some information from there, or get help from each other and from the community, to be more resilient … to sustain resilience.' (P16)

By sharing the knowledge they gained about resilience with others, many nurses found that their practice of resilience was further reinforced.

6.3. Chapter Discussion

This chapter presents novel findings that describe MHNs' experiences of the PRiN program and how they applied the knowledge and skills acquired from the program to their

personal life and professional practice. These findings are relevant to both thesis aims. They are incorporated into the integration in Chapter 8 to help explain variation in participant outcomes in the PRiN trial. Additionally, key findings are mapped against the Normalisation Process Theory (NPT) constructs in Chapter 9.3 to evaluate the PRiN program implementation.

The key themes indicated that nurses viewed the program as part of their professional training as well the organisation's commitment to supporting their resilience and wellbeing. This valuable opportunity allowed them to reflect on their resilience, practice, and personal understanding of what it means to be resilient. They felt more confident in coping with stress and future challenges after gaining this knowledge and learning stress-coping strategies. These skills and strategies included cognitive reframing, positive self-talk, emotional regulation, relaxation (e.g., deep breathing), and recognising personal strengths from posttraumatic growth. Subsequently, nurses could improve clinical practice (e.g., keeping calm in high-pressure ward environments) and enhance their interpersonal communication with family, friends, colleagues, and consumers (e.g., using active listening skills to manage interpersonal conflicts). They also reported being more proactive in personal and professional self-care to maintain resilience in their nursing practice. Further, they disseminated knowledge from the program to their colleagues and consumers, suggesting wider implementation of PRiN and the formation of a community of practice focused on resilience. These findings, except those related to nurses sharing their resilience knowledge with colleagues and consumers, are consistent with those in the prior qualitative study that explored MHNs' experiences and perspectives of the antecedent PAR program (Foster, Cuzzillo, et al., 2018).

There were no other qualitative or mixed methods study that have explored the implementation of a resilience intervention for MHNs. However, Henshall et al. (2023) conducted a single-site pilot randomised controlled trial investigating the effectiveness of a web-based resilience intervention for MHNs, the REsOluTioN program. Their study included some evaluation findings on the acceptability of the intervention (see Chapter 2.3.2.3). The authors reported that nurses positively received the REsOluTioN program, viewing it as an opportunity for learning and reflection, and enjoyed the networking with peers and mentorship aspects of the program.

In contrast to the REsOluTioN program, which was delivered entirely online (Henshall et al., 2023), the PRiN program was delivered face-to-face. In a systematic review of 18 trials of resilience interventions for generalist nurses, Yu et al. (2024) concluded that resilience interventions delivered digitally (e.g., via web-based training or self-directed learning) significantly improved nurse resilience at four to five-month follow-up timepoints. Conversely, face-to-face resilience interventions (which included workshops and group training for psychotherapy) had no effect on nurse resilience at any follow-up timepoint. These findings, however, are not consistent with the available evidence on resilience interventions in the mental health nursing literature. The face-to-face PRiN program significantly improved MHNs' resilience (measured with the Brief Resilience Scale) at three-month follow-up. In contrast, the web-based REsOluTioN program did not improve MHNs' resilience (also measured with the Brief Resilience Scale) at the six-week follow-up. Additionally, it may be that some interventions (such as biofeedback training, which included self-guided relaxation strategies) (Hsieh et al., 2020) that were included in Yu et al.'s (2024) review were not resilience interventions. Additionally, findings in this chapter indicate that MHNs generally preferred the face-to-face format of the PRiN program, which provided a platform for MHNs to build and maintain a positive in-person interpersonal connection with

their colleagues. In this health service context, with this group of MHNs, resilience interventions delivered face-to-face in a group format were preferred.

The majority of nurses, particularly more senior nurses, were familiar with the theoretical bases of the program (i.e., cognitive-behavioural therapy (CBT) theories, interpersonal theory, and posttraumatic growth theory; see Chapter 1.7). These theories are directly applicable to MHNs' therapeutic practice and are often taught in MHNs' graduate education. For example, the reflective nature of the program was familiar for MHNs who regularly engage in reflective practices such as clinical supervision. Cognitive-behavioural therapeutic skills are commonly used by mental health professionals including nurses. Many MHNs undertake focused professional development during their career in specific therapeutic skills such as CBT. It can therefore be concluded that, due to the theoretical basis of the program, which was directly relevant for the mental health context and their practice as mental health professionals, MHNs' found the knowledge and skills learnt or reinforced to be practical and applicable. This increased the likelihood that they would accept the program and recommend it to others. The acceptability of the PRiN program for MHNs has important implications for program implementation, which are further discussed in Chapter 9.3.

The findings in this chapter also identify existing challenges within the organisation, such as toxic work environments and conflicts with management and colleagues. These challenges align with the literature, which indicates that collegial stressors (such as bullying) and organisational stressors (e.g., sustained heavy workload) are the most frequently reported stressors for MHNs (Cranage & Foster, 2022; Foster, Roche, et al., 2021). Some nurses in this research suggested that, while the resilience program was a helpful addition to their wellbeing repertoire, it could not fully address these existing structural issues. As a result, the findings lend support to Foster, Cuzzillo, et al.'s (2018) proposal that building a resilient

mental health nursing workforce requires changes and support not only at the individual and work unit levels but also at the larger organisation and professional levels. For example, based on findings in this chapter, the health service in this research, as well as larger mental health nursing professional bodies (such as the Australian College of Mental Health Nurses) could facilitate the formation of a resilience community of practice. A community of practice, first proposed by Lave and Wenger (1991) and later expanded by Wenger (1998), has three structural characteristics: a domain of knowledge, a notion of community, and a practice. In the context of resilient practice, MHNs who complete a resilience education program such as PRiN, as well as those with an interest in resilient practice, could come together to form a community where they interact, share ideas, and learn strategies to maintain resilience in practice from other nurses. This can be seen as moving from a more passive, peripheral position (i.e., participating in facilitator-led PRiN program) into a more active role of coaching and educating others on resilience skills (Lave & Wenger, 1991). Having a community of practice of resilience could contribute to the wider dissemination of resilience programs such as PRiN as a means to sustain resilient practice to build and maintain a resilient mental health nursing workforce.

6.4. Chapter Summary

The findings in this chapter have addressed thesis Objective 4, by describing nurses' experiences of the PRiN program and how they applied the knowledge and skills learnt in the program to their practice. Nurses saw the program as a valuable chance to reflect on and enhance their resilience and practice. They used resilience knowledge and stress-coping strategies from the program to improve care delivery, interpersonal communication, and self-care. Additionally, they shared this knowledge with colleagues and applied it in their practice with consumers. These findings have important implications for the implementation of the PRiN program in the health service in the future, and across the wider workforce. The

findings emphasise the need for more support from organisations and professions to help MHNs build and maintain their resilience. These will be further discussed in the Discussion chapter. In the next chapter, the second set of findings from these interviews, which explored the experience and impacts of the COVID-19 pandemic on nurses' resilience, are described.

Chapter 7: Program Nurses' Experiences of Resilience During COVID-19

7.1. Chapter Introduction

The previous chapter described the first set of findings from the qualitative interviews with program participants, which addressed thesis Objective 4. In this chapter, the second set of findings from thematic analysis of the interviews is presented, which address thesis Objective 5: To explore the experience and impacts of the COVID-19 pandemic on the resilience of nurses in mental health settings. These findings have been published in a peer-reviewed journal article (Bui et al., 2023a).

Reflexive thematic analysis of interviews in relation to the COVID-19 pandemic generated four themes: *Experiencing significant disruptions; Making sense of shared chaos; Having professional commitment*; and *Growing through the challenges*. These themes describe the challenges associated with COVID-19 in relation to nurses' practice and care delivery, how they made meaning of pandemic-related disruptions to their work, and how they drew on internal resources and external support to overcome the challenges and grow from the experience.

These findings relate to both thesis aims. They were included in the integration (Chapter 8) to explore how program nurses' resilience during the COVID-19 pandemic helped explain variations in outcomes between the intervention and control arms in the trial. The findings also provide examples of how skills and knowledge from the program supported nurses' practice during highly challenging times (as the pandemic was a substantial contextual factor during program implementation), and were included with other key process

evaluation findings (from Chapter 5 and Chapter 6) to discuss PRiN program implementation (Chapter 9.3).

7.2. Publication 3: Mental Health Nurses' Experience of Resilience During COVID-19: A Qualitative Inquiry

The article was published in the International Journal of Mental Health Nursing in 2023. An authorship statement of contribution (Appendix 1) is included. The journal is currently ranked Q1 (SJR = 1.572) by SCImago (n.d.), and has an impact factor of 3.6 (Clarivate, 2023). Full citation for the article is as follows:

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ORIGINAL ARTICLE

Mental health nurses' experience of resilience during COVID-19: A qualitative inquiry

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Abstract

The COVID-19 pandemic created unprecedented demands and additional stress for nurses in mental health settings. There is no prior evidence on nurses' experience of building and maintaining resilience in the context of work during COVID-19. The aim of this study was to explore the experience and impacts of the COVID-19 pandemic on the resilience of nurses in mental health settings. Data from semi-structured interviews with 20 nurses from an Australian mental health service were analysed using reflexive thematic analysis. Four main themes were generated: experiencing significant disruptions; making sense of shared chaos; having professional commitment; and growing through the challenges. Nurses' practice and teamwork were disrupted by COVID-19 related changes to care models and infection prevention policies. They successfully adjusted by having awareness of self and others' emotions, using mental and emotional self-regulatory strategies, engaging in self-care, using 'bricolage' to create different ways to provide care, and having mutually supportive relationships. Nurses connected to their sense of purpose and professional commitment to fuel their therapeutic work and sustain care delivery. They experienced personal and professional growth with an increased understanding of their strengths and resilience. In the post-pandemic period, although the challenges presented by the pandemic have lessened, there are ongoing negative impacts on nurses' wellbeing. To maintain and strengthen their wellbeing and practice, the findings indicate the importance of professional development in emotional regulation skills, and strategies to strengthen self-care and build collegial relationships in teams. Resilience education can be implemented to support nurses' resilient practice skills.

KEYWORDS
COVID-19, mental health nurses, mental health nursing practice, qualitative, resilience

INTRODUCTION

Nurses working in mental healthcare settings face many workplace challenges associated with providing care for mental health consumers. These include interpersonal (e.g., conflicts with consumers and other staff, or occupational violence) and organizational (staff shortages and lack of managerial supports) stressors (Cranage & Foster, 2022; Foster, Roche, et al., 2020). COVID-19 has added to existing occupational stress and created additional challenges to nurses' wellbeing and care delivery, exacerbated symptoms in consumers with pre-existing mental health conditions (Murphy et al., 2021), and disrupted consumers' access to mental healthcare (Foye et al., 2021). During the pandemic, mental health services were required to change practices to meet the unprecedented demands and ensure consumer safety. Subsequently, nurses had to rapidly adapt to the changing landscape of care provision. Recent studies have shown that mental health nurses (MHNs) can actively build and strengthen their resilience in managing workplace stressors and challenges (Delgado et al., 2022;

Foster et al., 2023). There is, however, no prior qualitative evidence on the resilience of nurses working in mental health settings during COVID-19.

BACKGROUND

Further to the existing workplace stressors for nurses working in mental health, COVID-19 created unprecedented challenges for the mental health system and added to workplace stress for staff. Many hospitals and health organizations (including mental health services) were required to swiftly implement organizational and structural changes to prepare for continually evolving demands (Ward-Miller et al., 2021). Mental health consumers also presented with higher acuity, higher risk of aggression and were more likely to be admitted involuntarily (Abbas et al., 2021; Yalçın et al., 2021). Mental health nurses were required to navigate these rapid changes and adapt to health service disruptions (e.g., use of personal protective equipment or shifting to remote appointments as face-to-face consumer outreach was only allowed when strictly necessary; Foye et al., 2021; Johnson et al., 2021). As interpersonal skills and the therapeutic relationship are the cornerstone of mental health nursing practice (Zugai et al., 2015), these changes and disruptions affected MHNs' use of advanced therapeutic communication skills (e.g., non-verbal communication) and their ability to effectively build and maintain the therapeutic alliance when caring for mental health consumers (Foye et al., 2021).

Several quantitative studies have reported the impact of COVID-19 on MHNs' wellbeing and practice. King et al. (2022) reported that 30% of their cohort of $n = 161$ Irish MHNs had moderate to extreme anxiety due to their work in the pandemic. In a mixed-methods, online survey with 897 UK MHNs, Foye et al. (2021) found 61.4% of nurses were concerned about keeping up with the rapid adaptation of the health service and 53.5% were worried about catching COVID-19 at work, especially when managing emergency situations such as restraint or suicide attempts that required immediate response with little time to don personal protective equipment (PPE). These were consistent with findings of moderate levels of concern about COVID-19 in a sample of $n = 183$ Israeli MHNs (Dahan et al., 2022), and with two qualitative studies of MHNs' anxiety and concern for their personal safety when working with consumers with COVID-19 (Farrington et al., 2023; Gao & Tan, 2021). Authors have recommended provision of adequate organizational resources and support (including manageable workloads, attention to nurses' concerns and needs, and individualized psychological support) to MHNs to offset the negative wellbeing impacts of the pandemic (Dahan et al., 2022; Gao & Tan, 2021; King et al., 2022).

Workplace resilience is the dynamic process of positive adaptation that can lead to restoration of wellbeing and work performance following challenge and adversity (Foster et al., 2019; McLarnon & Rothstein, 2013) such as the COVID-19 pandemic. Following adverse work situations, individuals can initially experience disequilibrium. Resilient individuals then engage in cognitive, behavioural and emotional self-regulatory processes, and drawing on personal resources (e.g., emotional regulation or cognitive reappraisal ability) and environmental resources (e.g., managerial support) to maintain or regain their wellbeing and work performance (McLarnon & Rothstein, 2013).

In the wider fields of nursing, resilience research has gained increasing attention (Cooper et al., 2021), with nurses' resilience shown to be associated with reduced psychological harms (e.g., post-traumatic stress disorder) and positive wellbeing and mental health (Cho & Kang, 2017; Gao et al., 2017). Qualitative findings suggest that nurses from many different clinical settings regularly engage in self-regulation (such as creating emotional barriers or professional boundaries) using available resources (personal or workplace social supports) to maintain their resilience and manage workplace stress (Cooper et al., 2021). In the specialty field of mental health nursing, there is a growing body of evidence on resilience, but limited qualitative studies and none during COVID-19 (Bui et al., 2023; Foster et al., 2019). Most recently, Delgado et al. (2022) investigated the resilient processes MHNs drew on when engaging in emotional labour in their work. Nurses used several cognitive, emotional and behavioural self-regulatory skills (e.g., accessing clinical supervision, acting with awareness and or active involvement in wellbeing promotion workplace activities) to manage themselves and maintain professionalism. They also proactively engaged in self-care at work (e.g., seeking support and resources for professional development) to maintain their wellbeing (Delgado et al., 2022). Foster et al.'s (2023) interpretive narrative study explored the resilience resources MHNs use in their practice. Findings included proactive management of emotions, thoughts and behaviours; having a growth mindset and being active in learning and self-care; and maintaining supportive relationships with others. However, no qualitative studies to date have explored mental health nurses' experience of building and maintaining resilience in the context of the COVID-19 pandemic.

Aim

This study aimed to explore the experience and impacts of the COVID-19 pandemic on the resilience of nurses working in mental health settings, and addressed the following research questions:

- What were the impacts of the COVID-19 pandemic on the practice of nurses working in mental health?
- How did nurses working in mental health maintain their resilience during the COVID-19 pandemic?

METHODS

Research design

This interpretive qualitative inquiry is part of a larger mixed methods study evaluating the impacts of a resilience-building program for MHNs (Bui et al., 2022). This qualitative inquiry was conducted within the interpretivist paradigm (Levers, 2013), which includes the theoretical assumption that there are multiple realities indistinguishable from subjective experience (relativistic ontology), and that the generation of knowledge is influenced by the experience of both researcher and participants (subjectivistic epistemology). This approach is well suited for understanding subjective experiences and for generating rich data (Braun & Clarke, 2022; Levers, 2013; Merriam & Grenier, 2019), in this case, the experiences of nurses working in mental health settings during the COVID-19 pandemic. The study is reported according to the Consolidated criteria for Reporting Qualitative research (COREQ) checklist from the EQUATOR network. Ethics approval was granted by the Melbourne Health Office for Research (HREC/56912/MH-2020) and relevant University Human Research Ethics Committees (2020-127RC).

Participants and setting

The study was conducted between April 2021 and July 2022 during the COVID-19 pandemic, with nurses working in a large tertiary metropolitan mental health service in Victoria, Australia. The inclusion criteria were: (i) having participated in a workplace resilience program and (ii) being registered nurses (RNs) or enrolled nurses (ENs) in the mental health service (Bui et al., 2022). In Australia, RNs are nurses who have completed a Bachelor or a Master of Nursing pre-registration degree and have a broad scope of practice, including patient assessment, medication administration, care plan development, specialized care provision and engagement with professional development and leadership roles (Australian Government Department of Health and Aged Care, 2023). In contrast, ENs hold a Diploma of Nursing and practice under the supervision of RNs to provide nursing care, including patient monitoring and assisting patients with activities of daily living (Australian Government Department of Health and Aged Care, 2023). Nurses who participated in the resilience program (61 nurses/7 programs) were approached at the end of the program, provided with written information about the study, and invited to consent to be contacted for interview. Thirty-eight nurses (of 61) agreed to be contacted. Of these, 20 consenting nurses (up to three per program) were randomly selected for the interview using a random number generator (Bui et al., 2022). Although random sampling is not commonly used in qualitative research, it was used in the context of the larger study (Bui et al., 2022) to provide an equal opportunity for participant selection and experience across programs (Suresh et al., 2011).

Data collection

Semi-structured interviews were conducted by the first and last authors, who are both trained in qualitative interviewing. The interviews were conducted over the phone. The interview included two main questions, with prompts, on the impact of COVID-19 on nurses' professional practice, and their resilience. Interviews ranged from 21 to 54 min with an average of 30 min. They were audio recorded and transcribed verbatim by a professional transcription service and cross-checked. Prior to interview, participants provided audio-recorded informed verbal assent.

Data analysis

Data analysis was conducted following Braun and Clarke's (2022) six-phase reflexive thematic analysis (RTA) and an inductive approach. This analytic approach is commonly used in interpretive research (Braun & Clarke, 2022) and was suited to address the study aim and questions. The first author listened to audio recordings and read transcripts, and field notes multiple times to familiarize themselves with the data. Transcript data were imported, stored and managed using NVIVO 12 (QSR International, 2018). Initial codes were generated with line-by-line coding by the first author, then assembled (based on patterns of meaning or central organizing concepts) into groups that formed the basis for initial candidate themes. An iterative and recursive review process was conducted by all authors with the coded data to further refine, name and define the themes until they provided a consistent and coherent account of the data.

FINDINGS

Demographic characteristics of the 20 participating MHNs are presented in Table 1. The majority (70%) worked in an inpatient setting. A quarter of nurses had been working in mental health for less than a year, and were new graduate or general nurses transitioning into mental health. All participants had worked throughout the COVID-19 pandemic in 2021–2022. Four main themes were generated through RTA. The first theme (experiencing significant disruptions) describes the impacts of COVID-19 on nurses' practice. The remaining three

TABLE 1 Demographics.

	N = 20
Gender	
Male	6
Female	14
Age	
25–34	6
35–44	7
45–54	3
55+	1
Missing	3
Professional role	
RN	19
EN	1
Years working in mental health nursing	
<1	5
1–5	6
6–10	4
11–20	2
21+	2
Missing	1
Workplace setting	
Inpatient	14
Community	6
Received clinical supervision	
Yes	12
No	8
RN with specialist postgraduate mental health nursing qualification ($n = 19$)	
Yes	13
No	6

Abbreviations: EN, Enrolled nurse; RN, Registered Nurse.

themes (making sense of shared chaos; having professional commitment; and growing through the challenges) describe how nurses built and maintained their resilience.

Experiencing significant disruptions

Nurses faced many disruptions to their professional practice (including therapeutic interactions with consumers and teamwork with colleagues) due to changes at the health service in response to COVID-19. To keep consumers and staff safe against COVID-19, health services implemented new policies and practice guidelines in mental health inpatient units (use of PPE and social distancing measures including no visitors) and community units (e.g., telehealth consultations and work from home arrangements). Some nurses believed 'the level of care [consumers] received was probably a lot less during that time unfortunately' (Interview 9). These disruptions occurred in addition to existing stressors nurses experienced in their work (i.e., staff shortages, burnout or lack of support and appreciation from the organization) which were further exacerbated by the acuity of mental health consumers during COVID-19:

> I do feel like it's very challenging … this was my first mental health nursing experience, but I hear from other nurses, 'It wasn't like this before.' … we have more unwell patients in ICA [Intensive Care Area]. And it's not like one or two - we have a group of unwell people to manage.
>
> (Interview 18)

Nurses experienced these disruptions as frustrating, stressful and anxiety-provoking. One nurse (Interview 13) described having 'so many emotions with COVID' and 'feeling almost terrified' when her manager held a planning meeting just before the first COVID-19 lockdown. Many struggled to adapt because the changes were difficult to implement in mental health settings (e.g., wearing PPE during physical restraints in inpatient units) and disruptive to the relational foundations of MHNs' practice (including therapeutic engagement and recovery-focused interventions). Some nurses in inpatient settings saw their practice as becoming 'a very different style of nursing' (Interview 19), because staff and consumers were not allowed to move freely within units and interpersonal interactions were limited. Similarly, in community teams, 'there was that loss of connection … very hard to build rapport with new consumers when all you were doing was telehealth and phone' (Interview 9). Nurses felt powerless and frustrated by their inability to provide optimal care for consumers, particularly those affected by COVID-19:

> … it is very hard for consumers because they can't see their families as often… can't go out … it's heart-breaking … so we try to give whatever possible … letting them connect with each other, or having small visits from the family as per policies and procedures of the organization … It is hard for the staff as well because we have to abide by the policies …
>
> (Interview 20)

Organizational changes also affected the team-based nature of mental health nursing work. Nurses in community teams had to alternate between working from home and from the office, or were split into smaller units, to minimize the spread of COVID-19 and lessen its impact on staffing levels. In inpatient settings, they had minimal to no interaction and collaboration with other staff on the same shift, even during tea breaks. Nurses also had less opportunity to access clinical supervision and felt isolated

from other staff: 'Before the lockdown we had monthly team bonding exercises. We can't do those face-to-face anymore' (Interview 5).

Making sense of shared chaos

The chaotic changes at work that staff experienced, and consumers' experience of changed healthcare during the pandemic, were perceived by nurses as being a shared experience where 'everybody is in the same boat' (Interview 11). Nurses had reflected throughout the pandemic on the chaotic and unprecedented changes to their role, practice and work environment. Interpersonal practice and care delivery had become more difficult due to the pandemic, and they had to adapt and learn to 'move forward … in this new normal' (Interview 15).

Amid the chaotic and unprecedented changes to their role and practice, nurses tried to create order out of disorder by actively managing themselves to stay calm and grounded in the situations they were working in. They frequently checked in with their own emotions and thoughts to increase self-awareness of their mental and emotional state so they could think logically, maintain composure and manage stress. A nurse explained why this was important:

> Working in mental health - mental health nurses - we use ourselves as the tool. If you're not even able to be aware of yourself, to direct yourself, and to manage yourself, how are you going to use that tool effectively to establish any therapeutic intervention engagement [with consumers]?
>
> (Interview 16)

Nurses managed themselves using cognitive, emotional and behavioural strategies such as 'try and take the positives out of [COVID-19]' (Interview 9), 'draw upon your own protective factors and your own strength' (Interview 4), and 'not being so hard on yourself' (Interview 11). They also drew on support networks and confided in others. They persevered with their practice, accepted the challenging situation they were in, and committed to adapt and learn to practice in this new normal:

> What I've learnt from this very difficult period is that I'm stronger than I thought I was. I used to cry every day. I used to crumble down … nothing is getting better, but what changed is how I'm responding to this adverse episode [COVID-19] …
>
> (Interview 7)

For several nurses, navigating the shared chaos with consumers and staff provided an opportunity to build empathy and connect better with others. Due to the strongly relational nature of mental health nursing, nurses extended their emotional awareness beyond themselves to colleagues and consumers. They developed a better understanding of consumers' needs, felt more compassionate, and likened their own experience of life and work during COVID-19 as gaining a 'tiny insight into what it would be like for somebody with depression or with a severe mental health problem' (Interview 6).

By communicating with their colleagues about their own struggles with the pandemic, many nurses felt validated, found solace in knowing that they were not alone, and forged stronger social bonds with colleagues. In addition, drawing on their own insights and experience with coping with the pandemic, they coached and guided colleagues and consumers on how to self-care during lockdowns (e.g., 'cycling', 'going for a run' or 'a good book that you like to read or any music'; Interview 5). They reflected on how this reinforced their own resilience:

> I feel somebody is getting overwhelmed particularly now with COVID lockdowns and being really understaffed … they really struggle … I can help them think of their thought process. Remind them that they can do things … help them build on things that they're doing. And then, just like myself, remind them that those things are important and valuable.
>
> (Interview 5)

Having professional commitment

Nurses drew on their sense of professional duty and purpose, and their responsibility and commitment to consumers, to provide the best care they could, under the restrictive pandemic conditions and policies, to meet consumer needs. These personal and professional values facilitated a stronger focus and greater motivation to continue their mental health nursing work to the best of their ability:

> COVID changed a lot of things. People become very unwell, which is unfortunate, but it is what it is. I still have to work. This is my workplace, and this is my job. No matter how they are, I have to go through this shift.
>
> (Interview 18)

Individually and in their team, nurses negotiated between upholding policies and finding different ways to maintain usual care routines (e.g., 'having small visits from the family as per policies and procedures of the organization'; Interview 20). They showed commitment to their work amid the uncertainties and changes to practice and care delivery, and felt rewarded and encouraged to be better clinicians:

> We've had conversations as a team since and I think we all felt that way ... the team has shown how resilient we can be, how we can respond to change, and how we can look after and support each other ... I remember us thinking 'how are we going to do some of these assessments ... do all those things?' I think we worked that out ... That's very empowering.
>
> (Interview 13)

Nurses also drew on their sense of duty and professional commitment to overcome COVID-19 related personal challenges that impacted their practice. One nurse 'hated working during COVID' because 'it was really difficult with the constant juggling' between work and other personal commitments that arose from COVID-19 (e.g., home-schooling of young children), yet she still committed to 'try and support [consumers]' to the best of her ability (Interview 13). Another nurse balanced her concern about bringing COVID-19 home to her family by committing to 'do what I've got to do and just keep doing it ... wear the PPE ... keep ourselves safe' (Interview 19).

In addition, some nurses accessed psychosocial support from their manager and the organization, for instance, 'I had a couple of sessions through Employee Assistance Service (EAP)' (Interview 8). Others, however, did not utilize EAP throughout the pandemic, even though they were aware it was available. In several instances, nurses did not see value in terms of the availability of, and access to, psychological support, supervision and training from the organization, because '[mental health nursing] is a busy and challenging job, and people don't really think it's going to be helpful' (Interview 14). In contrast, it was recognized that nurses needed to be active and vocal about their rights to receive adequate support and resources (e.g., additional perks and entitlements) at work:

> There are things we're not going to be able to change in our industry ... What I would like to see is that nurses are better looked after... just some entitlements and some perks in our job ... there's a bit of a general attitude that we need to shift, because they think 'We're not going to get looked after anyway.' ... 'That's just how nursing is', and we've just accepted it, so we haven't screamed enough.
>
> (Interview 11)

Growing through the challenges

Nurses reflected on the personal and professional growth they experienced by overcoming challenges posed by COVID-19 at work, and their preparedness for adversity beyond the pandemic. At a personal level, nurses had a better understanding of their own strength and perseverance, and a greater appreciation for self-care to maintain their practice. At a practice level, they took pride in developing different ways of providing care, had better collegial relationships, used their strengths in clinical practice, and displayed a positive attitude about their ability to tackle future challenges:

> ... me being fresh out of university, a novice nurse, that work environment [COVID-19] was really challenging ... at that time I probably showed no resilience ... I was so close to giving up. But I didn't. I persisted. I had a really great educator who helped me through the journey ... I feel like I have shown how resilient I was, and that gives me motivation ... if something challenging comes up my way [again], I can do this ...
>
> (Interview 12)

Many nurses viewed the challenging work environment during COVID-19 as an opportunity to develop a better understanding of themselves and of their resilience. Nurses had various views on their resilience, from being able to 'soldier on..., keep going... to exist beyond the pain' (Interview 3) to 'being able to reflect ... stay strong and continue on' (Interview 19). Nurses viewed their ability to maintain their professional practice during COVID-19 as indicative of their professional growth and resilience. They self-affirmed their efforts to become a better clinician, which gave them confidence in dealing with future workplace adversities. Professional growth and development included finding new ways of working (e.g., telehealth or working from home) and positive changes in relationships with work colleagues. Nurses grew to recognize the importance of teamwork and collegial connection, and actively arranged informal support such as 'supervision between four or five of us' (Interview 13) or 'Zoom meetings with staff to do online trivia to help promote the social aspect' (Interview 5). They attributed this to having the shared experience where 'we're all kind of stuck in COVID' (Interview 8):

> ... with this shared experience that everyone had, I think we all felt a little more connected because people felt more inclined to have open conversations at work about how they were feeling ... which is really different. Really unusual. Not everyone does that, but because we were having this shared experience, I think people felt more comfortable to open up, and that was great.
>
> (Interview 9)

Nurses also better understood the role of personal assets (e.g., perseverance and prior life experiences) and had

a greater appreciation for self-care in strengthening their resilience during this demanding time, recognizing that 'nurses typically aren't very good at self-care' (Interview 9). Similar to their professional practice, in resource-constrained environments where usual self-care strategies (social gatherings, shopping or community sport) were unavailable due to COVID-19 restrictions, many nurses developed different skills (e.g., reading, spending time with family or virtual connection with friends) to support their wellbeing and cope with stress.

DISCUSSION

This is the first qualitative study to report the experience and impacts of the COVID-19 pandemic on the resilience of nurses working in mental health settings. The study builds on prior knowledge of nurses' capacity for positive adaptation to workplace challenges in mental health settings (Delgado et al., 2022; Foster et al., 2023; Foster, Cuzzillo, & Furness, 2018). New understandings of how mental health nurses' resilience was challenged and maintained during COVID-19 are useful for addressing the enduring negative impacts of the pandemic on nurses' wellbeing and clinical practice. A key finding was that mental health nurses' resilience was linked to their capacity to apply emotional intelligence skills (including recognition of the emotions of self and others, and use of mental and emotional self-regulation to manage their emotions and thoughts) to remain calm and problem-solve significant disruptions to their practice. Emotional intelligence consists of a set of skills related to how people effectively understand, perceive, reason with and manage the emotions of themselves and others (Palmer et al., 2008). Awareness of self and others' emotions, reflection and emotional regulation are also features of therapeutic use of self in mental health nursing practice (Foster, Marks, et al., 2020) and emotional intelligence is a part of personal resilience (Foster, Cuzzillo, & Furness, 2018). These findings share some similarity with those of generalist nurses, who used self-regulation to manage anxiety and maintain a positive perspective when caring for patients with COVID-19 (Huang et al., 2021), but the use of emotional regulation during COVID-19 by nurses in mental health has not previously been documented. Previous qualitative studies with MHNs have reported nurses' use of emotional intelligence skills (e.g., emotional self-regulation) to tackle workplace challenges such as emotional labour (Delgado et al., 2022) or complex interpersonal interactions (Foster et al., 2023). Wellbeing and resilience-enhancing interventions that provide nurses with these emotional intelligence skills (Foster, Cuzzillo, & Furness, 2018; Foster, Shochet, et al., 2018) can be useful strategies to support nurses' personal wellbeing and practice against future adversities.

This study has explored how mental health nurses maintained their resilience in particularly resource-constrained environments. COVID-19 restrictions caused the loss of several self-care and coping strategies nurses had previously used at work (e.g., team-debriefing and clinical supervision) and at home (e.g., social sport). They positively adapted by being flexible and creative with using different self-care strategies (virtual connection with friends or online informal supervision) and ways of practice (telehealth). 'Bricolage', the practice of creating order (or solutions) to a problem using available resources, has previously been suggested as a factor in resilience in healthcare settings (Mallak, 1998; Mallak & Yildiz, 2016). Bricolage might be a part of 'resilient practice', which is nurses' use of cognitive, behavioural and emotional strategies to effectively manage challenging interpersonal interactions to provide optimal care (Foster, Cuzzillo, & Furness, 2018; Warelow & Edward, 2007). Warelow and Edward (2007) posited that MHNs who engaged in resilient behaviours (e.g., transforming adversity into strengths) could incorporate these into their caring practice with consumers through coaching and role modelling. Foster, Cuzzillo, and Furness (2018) expanded understandings of resilient practice to include the use of positive self-talk, detaching from stressful events, not taking things personally, and showing more empathy, which were skills nurses had learnt from resilience education. In the current study, there was evidence of nurses engaging in resilient practice through self-regulation to respond to COVID-19 challenges and who in turn coached consumers and colleagues on these skills. In addition, findings suggest resilient practice may also include nurses' capacity for bricolage (i.e., the ability to draw on a range of strategies, problem-solve and improvise different ways of working and delivering care to consumers in resource-scarce environments). Mental health nurses' engagement in resilient practice during COVID-19 and the presence of bricolage in the process of maintaining resilience are new findings. The applicability of bricolage for resilient practice of MHNs warrants further investigation.

In this study, nurses reported that they grew in their professional practice to adapt to the challenges posed by the pandemic. This included an increased sense of their personal strengths, greater confidence, creativity and flexibility with care delivery, a positive can-do attitude and readiness to tackle new challenges. They also reported positive changes in their relationships with other staff and consumers through changes to their attitudes and behaviours. Personal growth has previously been identified as an outcome of the dynamic process of positive adaptation against adversity in the context of work (Gillespie et al., 2007; McLarnon & Rothstein, 2013). However, discussion on professional growth and improvements in clinical practice as an outcome of the resilience process is limited in mental health nursing apart from the work of Delgado et al. (2022) and Foster

et al. (2023). They found that MHNs proactively engaged in professional development to improve their practice (i.e., having a growth mindset) and ability to tackle challenging practice situations (Foster et al., 2023), and to hone their self-regulatory capacity and emotional intelligence skills to maintain internal equilibrium and wellbeing (Delgado et al., 2022). The current findings build on prior knowledge to extend conceptual understandings of resilience in mental health nursing practice and can also be seen to indicate aspects of post-traumatic growth (Lepore & Revenson, 2006), in relation to greater recognition of personal strengths, improved relationships and greater appreciation for the need for self-care in the context of COVID-19.

An important finding on growth for nurses in the current study was that being resilient meant recognizing the importance of self-care in promoting personal wellbeing and good clinical practice. Other qualitative studies with general nurses during COVID-19 also identified the importance of personal self-care (e.g., online friendship, music and reading) in maintaining nurses' resilience during COVID-19 (Huang et al., 2021; Jiang et al., 2022). Personal and professional self-care have previously been reported to be a key facet of mental health nurses' resilience (Delgado et al., 2022; Foster et al., 2023; Foster, Cuzzillo, & Furness, 2018; Marie et al., 2017; Prosser et al., 2017). We also found in this study, however, that some nurses were resistant to professional self-care (e.g., using clinical supervision and employee counselling) under the assumption it would not be helpful for the challenges of the work. This is consistent with findings from Fahy and Moran's (2018) study, where MHNs' resistance to formal support was related to their perception of risks and challenges being a part of the job. However, the restrictions imposed by COVID-19 (e.g., having to be isolated from family and colleagues) reinforced the importance of self-care for most nurses in this study. They grew to understand the need to look after themselves so they could effectively carry out their work. Self-care is essential for dealing with major adversity in practice, and nurses reported developing a greater appreciation and willingness to engage in self-care due to the impacts of the pandemic.

STRENGTHS AND LIMITATIONS

The study was conducted with one group of nurses working in one mental health service in Australia. The participants had completed a resilience program and had more advanced knowledge of resilience than other nurses. The findings may therefore not be transferable to other MHNs or settings. The knowledge and skills gained from resilience education were illustrated through the experience of these nurses who successfully navigated unprecedented workplace challenges during the COVID-19 pandemic.

CONCLUSION

This study described the experience of nurses working in mental health settings in Australia during COVID-19, and the processes they engaged in to maintain their resilience and practice. To adjust to and navigate pandemic-related disruptions to consumer care and professional practice, nurses managed themselves with cognitive, behavioural and emotional self-regulation skills, and stress management strategies. Having a sense of purpose and professional commitment were important factors that drove nurses' caring practice during this challenging time. Nurses experienced personal and professional growth, displayed a stronger understanding of themselves and their own strengths, felt confident with tackling difficult workplace situations, used 'bricolage' to create different ways of practice, and had a greater appreciation for self-care. Beyond the pandemic, the study presents important implications for how health services can promote nurses' growth and resilience to buffer against enduring negative impacts of adversity on their wellbeing and clinical practice.

RELEVANCE FOR CLINICAL PRACTICE

The findings demonstrated that MHNs have the capacity to adapt to unprecedented challenges posed by a pandemic, by engaging in a resilient process and applying learned strategies to their professional practice. Nurses' capacity to be resilient needs to be encouraged and nurtured by organizations and the profession. Workplace resilience education and strategies (including emotional intelligence skills and building collegial relationships in teams) can be implemented to support nurses' resilient practice and create a sustainable mental health nursing workforce that can deal with future adversities. In addition, organizations and professional bodies have a duty to encourage self-care, provide access to psychosocial support, assist nurses to voice their workplace needs, and ensure that nurses do not sacrifice their own health and wellbeing in the process of providing care for consumers.

AUTHOR CONTRIBUTIONS

All authors contributed to the conception and/or design of the study and MVB and KF conducted data collection. MVB led the data analysis and all authors contributed to it. MVB drafted the manuscript and all authors contributed to refining and/or critically reviewing the manuscript. All authors are in agreement with the manuscript.

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CONFLICT OF INTEREST STATEMENT

Professor Kim Foster is an Editor of the International Journal of Mental Health Nursing. She took no part in the management, reviewer selection or review outcomes of this paper. The authors declare there are no other conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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7.3. Chapter Summary

This chapter presented the second set of findings of qualitative data collected from semi-structured interviews with program participants, that explored the experience and impacts of the COVID-19 pandemic on the resilience of nurses in mental health settings. These findings inform the first thesis aim by helping to explain variation in participant outcomes between the intervention and control arms in the trial (see the integration in Chapter 8). Additionally, these findings inform the second thesis aim (to evaluate the PRiN program implementation), as the impacts of COVID-19 on health service operations may act as barriers to or facilitators of PRiN program implementation.

Findings indicated that nurses experienced significant disruptions to their practice and collaborative work with colleagues due to the pandemic, which caused organisational changes to care delivery (e.g., use of Telehealth in the community and minimal teamwork in the wards). To adjust to the changes and maintain resilience in their practice, they used a range of personal strategies and external resources including mental and emotional self-regulatory strategies, self-care, and having mutually supportive relationships. They also displayed *bricolage* by drawing on their sense of purpose and professional commitment to drive their practice and to problem-solve challenges related to delivering care to consumers in resource-scarce environments. Bricolage, defined as the ability to create solutions to problems using available resources, has previously been suggested as a resilience factor in healthcare settings (Mallak, 1998; Mallak & Yildiz, 2016). By overcoming the challenges, nurses were able to grow personally and professionally. The findings demonstrated how nurses used knowledge and skills gained from the resilience education in the PRiN program to cope with and overcome unprecedented demands and challenges to their nursing practice, and maintain their resilience. The findings also have important implications regarding the ongoing negative impacts of the COVID-19 pandemic on nurses' wellbeing and emphasise

the need for health services to provide resilience interventions to strengthen nurses' resilience and promote professional growth.

Overall Summary of Process Evaluation Findings

In this Findings section comprising the past three chapters, five sets of process evaluation findings were presented. These were nurses' and managers' acceptability of, and satisfaction with, the PRiN program; program fidelity; and nurses' experiences of applying the knowledge and skills from the program to maintain their resilience and wellbeing, and grow through adversity, particularly during COVID-19. These findings are summarised in Table 7.1 below.

The findings can be summarised into two main process evaluation findings pertaining to the implementation of the PRiN program at the health service:

i) PRiN was implemented with high fidelity (95% full completion), and provided nurses with resilience-promoting knowledge and practical strategies that had positive effects on their resilience and clinical practice, even in the face of significant disruptions from the COVID-19 pandemic;

ii) Nurses reported high satisfaction (mean 4.5/5) with the PRiN program, and nurses and managers in the organisation found PRiN acceptable as a valuable addition to nurses' continuous professional development and supported its wider implementation in the organisation.

The overall findings indicate that PRiN was successfully implemented at the health service and was beneficial for enhancing nurses' resilience, wellbeing, and practice. Following the program, nurses felt more confident in their stress-coping capacity and identified improvements in their clinical practice. They were able to apply resilience strategies to cope with, and to help others cope with, the challenges presented by COVID-19. These strategies included cognitive reframing, positive self-talk, challenging negative self-

talk, emotional regulation, using relaxation techniques (e.g., deep breathing), recognising their personal strengths, and proactively engaging in activities that promote wellbeing (e.g. self-care) to maintain their resilience.

Program nurses were highly satisfied with PRiN (mean = 4.50/5), and managers and team leaders strongly believed in the benefits of the PRiN program (mean = 4.76/5). Nurses shared knowledge from the program to colleagues and consumers to help them cope with stress and adversity. The organisation was supportive of the implementation of the PRiN program. To reduce barriers to future program implementation such as heavy work demands, staff shortages, and a lack of interest from nurses, additional rostering and information about the benefits of the program may encourage nurses to participate.

Table 7.1: Overall Summary of Process Evaluation Findings

Type	Findings
Participant satisfaction and acceptability	Nurses were highly satisfied with the program (mean = 4.5/5). Nurses found PRiN most valuable for enhancing their understanding of resilience (mean = 4.7/5), for increasing their use of positive self-talk (mean = 4.68/5), and recognising and challenging negative self-talk (mean = 4.65/5). Nurses learnt several skills and strategies for effectively coping with stress, including challenging negative self-talk, cognitive reframing, using deep breathing techniques, and employing self-talk to cultivate self-compassion. Additionally, they improved their interpersonal communication through using active listening and respecting others' perspectives. They also learnt to recognise their posttraumatic growth, which became a new source of personal strength. Recommendations included more in-depth discussion of theories, more clinically relevant examples, annual refresher courses, and wider dissemination of the program.

Barriers and facilitators to program implementation	Nurse unit managers and team leaders strongly believed in the benefits of the PRiN program (mean = 4.76/5) and fully supported its implementation. Nurse unit managers and team leaders noticed improvements in nurses' stress management capacity and clinical practice following the program (mean = 3.35/5). Barriers to program implementation were heavy work demands, staff shortages, and a lack of staff understanding about PRiN. Facilitators to PRiN implementation included additional organisational resources for rostering flexibility, and encouragement for nurses to participate.
Program fidelity	PRiN was delivered with strong fidelity (95% of content fully delivered). Program delivery was influenced by group size and mix; it was more challenging to facilitate in-depth discussions in smaller groups. Minor changes to content delivery were primarily empathic communication activities not being fully completed in four of the seven programs. Nurses enthusiastically engaged in group activities and discussions and shared their personal experiences.
Program participants' experiences with PRiN	Nurses viewed the program as both a part of their professional training and the organisation's commitment to supporting their resilience and wellbeing. PRiN allowed nurses to reflect on their resilience, practice, and personal understanding of what it means to be resilient. Skills and strategies from PRiN included cognitive reframing, positive self-talk, emotional regulation, relaxation (e.g., deep breathing), and recognising and drawing on personal strengths. Nurses were more proactive in their personal and professional self-care to maintain their resilience.

	Nurses felt more confident in coping with stress and future challenges, and applied skills learnt to their clinical practice (e.g., keeping calm in high-pressure inpatient environments) and strengthened their interpersonal communication and relationships with family, friends, colleagues, and consumers (e.g., using active listening skills to manage interpersonal conflicts). Nurses shared knowledge from the program to their colleagues and consumers, and recommended wider implementation of PRiN and the formation of a community of practice focused on resilience.
Program participant experiences with COVID-19	During COVID-19 disruptions to face-to-face practice and team-based work, nurses maintained their resilience using personal resources (e.g., resilience skills and strategies from PRiN, sense of purpose, and professional commitment) and external resources (e.g., mutually supportive relationships). Nurses coached consumers and colleagues on how to maintain resilience during COVID-19 using skills and strategies from PRiN. By overcoming these extraordinary challenges, nurses were able to grow personally and professionally.

The next section of the thesis contains three chapters. Chapter 8 integrates the process evaluation findings with the eight participant outcomes from the PRiN randomised controlled trial to generate meta-inferences and address the first thesis aim, i.e., to identify factors that may help explain variation in participant outcomes (i.e., between the intervention and control arms) in the trial. The implications of meta-inferences are discussed in relation to the literature in Chapter 9.2.

The key process evaluation findings in relation to the Normalisation Process Theory are also discussed in Chapter 9.3 to address the second thesis aim, to evaluate the PRiN program implementation. Finally, the overall thesis conclusion and recommendations are provided in Chapter 10.

INTEGRATION, DISCUSSION & CONCLUSION

Chapter 8 – Integration of Findings

Chapter 9 – Discussion

Chapter 10 – Conclusion and Recommendations

Chapter 8: Integration of Findings

8.1. Introduction

This chapter addresses the first thesis aim; to identify factors that may help explain variation in participant outcomes (i.e., between the intervention and control arms) in the randomised controlled trial of the Promoting Resilience in Nurses (PRiN) program. The chapter describes the integration of key process evaluation findings with those of the PRiN trial outcomes to produce eight meta-inferences. Integration was achieved by merging relevant process evaluation findings (i.e. manager survey, interviews, fidelity checklists, and satisfaction survey) with each of the trial outcomes, using joint display tables to reach integrated overall claims or conclusions (i.e., meta-inferences), and addresses thesis Objective 6:

- Explore factors in implementation of the PRiN program that may help explain variation in trial outcomes between the intervention and control groups.

Identifying factors that help explain variation in outcomes between nurses in the intervention and control groups is important for understanding the effectiveness of PRiN as a resilience intervention and for optimising future implementation and uptake of PRiN at other health services. To address this integration phase objective, and for the purpose of integration analysis in this thesis, trial outcomes data were provided by the trial statistician on request of the candidate and Principal Supervisor and have been included in the thesis with the permission of the Principal Investigator of the PRiN trial (i.e., the Principal Supervisor). Since that time, the trial data has been published (Foster, Shochet, et al., 2024) For further detail on the trial outcomes and analysis, see Appendix 16.

8.2. Integration of Findings and Trial Outcomes

In research using mixed methods, *integration* is the point of interface between qualitative research and quantitative research and is an essential element of this research approach (Creswell & Plano Clark, 2018). When qualitative and quantitative research findings are brought together using integration, understanding of the research problem (in this case, variation in trial outcomes between the intervention and control groups) is elevated and expanded (Creswell & Plano Clark, 2018). In this thesis, integration of quantitative and qualitative process evaluation findings with the main trial outcomes was used to help understand the variation in trial outcomes between the intervention and control groups. Implementation factors from the process evaluation included *contextual* (e.g., program implementation during a period of high work demands), *operational* (how the programs were delivered), and *structural* (available organisational resources to support program implementation). *Variation in trial outcomes* refers to statistically significant differences (or lack thereof) between intervention and control groups, in relation to the eight trial outcomes (see Table 8.1) measured in the PRiN randomised controlled trial (Foster, Shochet, et al., 2024). These were coping self-efficacy (primary outcome), and wellbeing, psychological distress, resilience, posttraumatic growth, workplace belonging, emotional intelligence behaviours, and turnover intention (secondary outcomes).

All trial outcomes were included in the integration regardless of whether they were statistically significantly different between the intervention and control arms. Of these eight outcomes, five (i.e., coping self-efficacy, wellbeing, psychological distress, resilience, and posttraumatic growth) were statistically significantly improved in the intervention group at *Time 2* (T2; following the program) and at *Time 3* (T3; 3 months after the program) (Foster, Shochet, et al., 2024). Additionally, emotional intelligence behaviours improved at Time 2 in

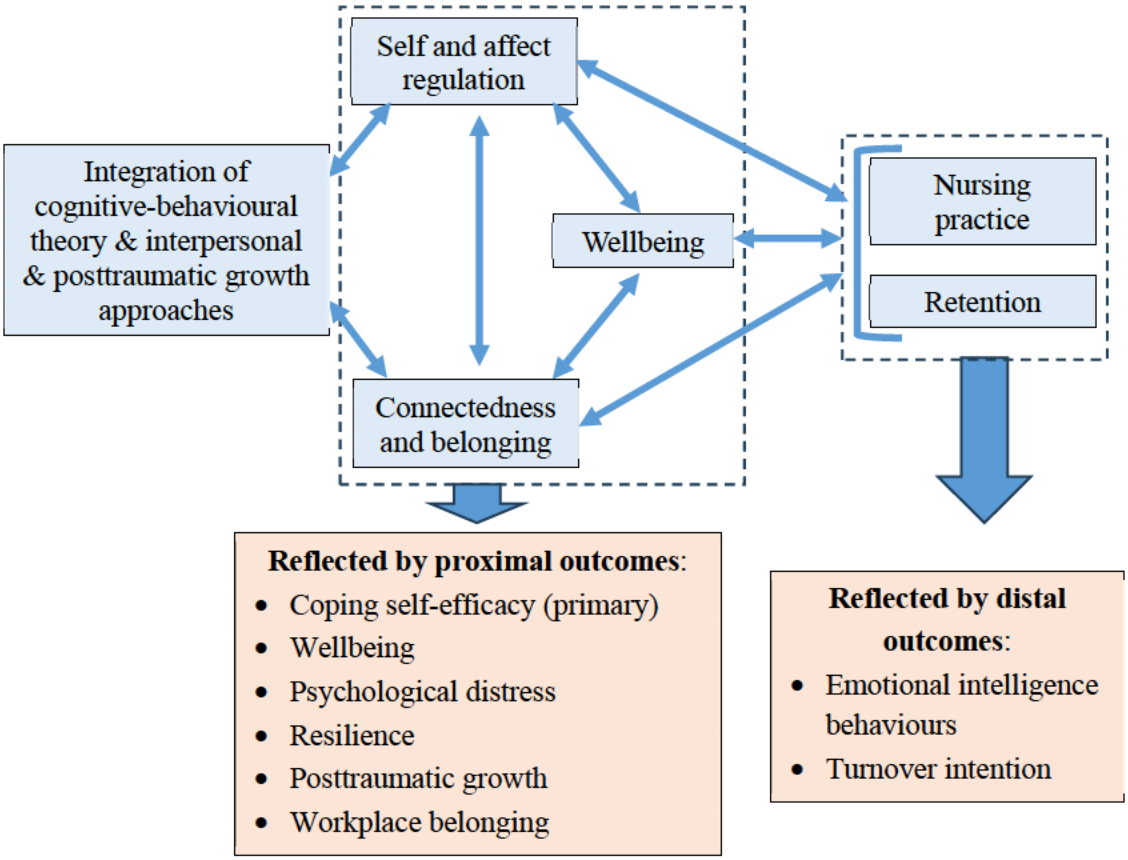
the intervention group, and workplace belonging improved at Time 3. There were no improvements for turnover intention in the intervention or control group at both timepoints.

Table 8.1: PRiN Randomised Controlled Trial Measure Definitions

Outcome type	Outcome Measures	Definition of construct
Proximal	**Coping Self-efficacy short form** (primary outcome; Chesney et al., 2006)	Person's perceived ability to cope effectively with life challenges
	Mental Health Continuum short form (Keyes et al., 2008)	Emotional, mental, social, and psychological wellbeing.
	Kessler Psychological Distress scale (Andrews & Slade, 2001)	Non-specific psychological distress focusing on depression and anxiety
	Brief Resilience Scale (Smith et al., 2008)	Recovery from stress and coping with stress
	Posttraumatic Growth Inventory (Tedeschi et al., 2018)	Positive psychological changes in response to stressful or traumatic life events
	Psychological Sense of Organisational Membership scale (Cockshaw & Shochet, 2010)	Feelings of being accepted and valued by organisation
Distal	**Genos Emotional Intelligence Inventory** (Gignac, 2010)	Frequency and typicality of emotionally intelligent functioning and behaviours at work
	Turnover Intention (Kelloway et al., 1999)	Person's intention to leave current organisation and seek new job

These trial outcomes reflect relevant aspects of the PRiN program theory and content and anticipated proximal and distal outcomes (see Figure 8.1). As identified in Chapter 1.7, PRiN is underpinned by integration of evidence-based cognitive behavioural and interpersonal approaches with posttraumatic growth theory. The program aims are to promote nurses' resilience, increase their mental health and wellbeing in the workplace, improve relationships and decrease conflict by increasing interpersonal and communication skills, promote stress management skills, increase their ability to manage and regulate their emotions in times of stress and adversity, and promote their capacity for posttraumatic growth.

Figure 8.1: Theoretical Model of the Promoting Resilience in Nurses (PRiN) Program (Foster, Shochet, Shakespeare-Finch, et al., 2018)



To address Objective 6 (to explore factors in implementation of the PRiN program that may help explain variation in participant outcomes between the intervention and control arms), meta-inferences were generated by integrating (i.e., merging) trial outcomes with key qualitative and quantitative process evaluation findings. *Meta-inferences* are overall conclusions or explanations generated from the integration of qualitative and quantitative findings (Schoonenboom, 2022) using higher-level reasoning and analysis to surpass the sum of each individual set of findings (Younas et al., 2023). The integration data analysis procedures (including integration intent, and how the findings were presented and interpreted) were discussed in detail in Chapter 4.9. To summarise, the intent of integration in this thesis was to develop meta-inferences (overall conclusions or understandings) by

integrating trial quantitative outcomes (represented by estimated treatment effect, p-value, and confidence interval) with qualitative and quantitative process evaluation findings from Chapter 5, 6, and 7 (see Overall Summary of Process Evaluation Findings). This integration facilitated a deepened understanding of factors that help explain variation in participant outcomes between the intervention and control groups, and highlighted factors that might optimise future implementation and uptake of PRiN at other health services. To achieve integration, relevant qualitative and quantitative process evaluation findings are shown alongside each trial outcome, through side-by-side comparison using joint display tables, to show the extent to which the process evaluation findings and outcomes confirmed, contradicted, or expanded each other (Younas et al., 2023). Joint display of findings from different data sources, allows a nuanced comparison of the findings, that facilitates looking at the data in a different way, thus enabling the generation of *meta-inferences* (Creswell & Plano Clark, 2018).

Table 8.2 and Table 8.3 are joint display tables that visually bring together, or integrate, each of the trial outcomes, and quantitative and qualitative findings from the process evaluation, to allow comparison and generation of meta-inferences (Creswell & Plano Clark, 2018). These integration tables report the trial outcomes within two key groups: proximal and distal outcomes. The six proximal outcomes were those directly targeted by the program and include outcomes indicating positive adaptation to stress and adversity (i.e., higher coping-self-efficacy, wellbeing, posttraumatic growth and resilience, and lower mental distress), and connectedness and workplace belonging. The two distal outcomes, i.e., nursing practice (as measured here by emotional intelligence behaviours as a proxy for practice) and staff retention (measured by turnover intention), were those posited by the research team to be more indirectly affected by the program and had not been previously tested.

In each integration table, the *estimated treatment effect* (Est. effect; i.e., intervention minus control), *95% confidence interval* of the estimated treatment effect (95% CI), and *p-value* are included for the trial outcomes (Foster, Shochet, et al., 2024). The intervention group had n = 73 nurses, and the control group had n = 71 nurses. *Program nurses* and *participants* (P) refer to nurses in the intervention group. Trial outcomes were measured using self-reported validated measures at *Time 1* (T1; upon registration to the trial), *Time 2* (T2; following the program) and at *Time 3* (T3; 3 months after the program).

Relevant process evaluation findings (participant satisfaction and acceptability, barriers and facilitators to program implementation, program fidelity, and program participants' experiences with PRiN) and illustrative exemplars are included and presented alongside each trial outcome. Not all datasets had relevant findings for each trial outcome, and only those that did were included in each table. If the trial outcome and evaluation findings and data led to the same interpretation, they were labelled as *confirmed* (Fetters, 2020). Conversely, they were labelled as *discordant* if any conflict existed between them (Younas et al., 2023). Finally, if the findings supported or provided additional meaning for one another, they were labelled as *expanded* (Younas et al., 2023).

8.2.1 Meta-inferences of Proximal Outcome

Table 8.2: Joint Display Table for Integrated Findings on Proximal Outcomes

Primary outcome: Coping self-efficacy	Process evaluation findings and exemplars		Integration	Meta-inference
	Type	**Findings and exemplars**		
Time 2 Est. effect 21.2 95% CI 13.3 to 29 p-value <0.0001 **Time 3** Est. effect 12.1 95% CI 4.7 to 19.6 p-value 0.002 Coping self-efficacy (nurses' perceived ability to cope effectively with life challenges) was statistically significantly higher in the intervention group at T2 & T3 (Foster, Shochet, et al., 2024).	**Participant satisfaction and acceptability**	Nurses found the program valuable in assisting them to gain a greater understanding of their strengths (item mean score 4.42/5) and felt more confident in drawing on their own strengths following challenging situations (item mean score 4.48/5). Nurses found the program valuable for helping them manage their stress (item mean score 4.40/5), deal with future stress (item mean score 4.40/5), increase their use of positive self-talk (item mean score 4.68/5), and use a more proactive problem-solving approach (item mean score 4.28/5). Nurses found the program valuable for coping with adversity: '*I feel more confident to face a challenging situation at work and personal life [because of] self-talk.*'	MHNs felt more confident in their ability to cope effectively with challenges and manage stress because they had acquired skills needed for coping with challenging situations and solving problems. These skills include positive self-talk, drawing on personal strengths, strategies to stay calm when facing challenges, and effective communication with consumers and colleagues in the workplace.	**Confirmed:** Ability to cope with challenges was strengthened by improved self-confidence through using cognitive skills, effective communication and problem-solving skills, and drawing on personal strengths.
	Barriers and facilitators to program implementation	Nurse unit managers and team leaders noticed improvements in nurses' stress management capacity: '*One [nurse] … got a lot out of [the program]. She became more confident and was able to manage her stress.*'		
	Program participants' experiences with PRiN	Nurses felt more confident in coping with stress and future challenges: '*I feel my self-perception has improved … I have more faith in myself … reassured that I have the skills … to tackle the tricky things that come up at work and not to panic … just taking a moment to just walk away and take some deep breaths …*' (P9) '*After I learnt about resilience, I was less stressed out … I knew how to cope … felt more confident … not hesitate to be ICA [intensive care area]*		

		leader … when the consumer became abusive … I knew how to deal with it in my mind, so it didn't affect me badly.' (P2)		

Secondary outcome: Posttraumatic growth (PTG)	Process evaluation findings and exemplars		Integration	Meta-inference
	Type	**Findings and exemplars**		
Time 2 Est. effect 16.1 95% CI 7.0 to 25.3 p-value 0.001 **Time 3** Est. effect 8.9 95% CI 0.6 to 17.2 p-value 0.035 PTG (positive psychological changes in response to stressful or traumatic life events) was statistically significantly higher in the intervention group at T2 & T3 (Foster, Shochet, et al., 2024).	**Participant satisfaction and acceptability**	Valuable skills learnt from the program included '*recognising the good that can come from trauma.*' and '*posttraumatic growth, learning about it and the development of it.*'	Most nurses were able to reflect on trauma and how they overcame and recovered from traumatic situations, how the experiences changed them, and how they had grown through the challenges (i.e., having an appreciation for life and discovering personal strengths) as a result of learning about posttraumatic growth in PRiN.	**Confirmed:** Posttraumatic growth increased through improved understanding of the concept and reflecting on recovery and growth and strengths nurses had gained from dealing with past trauma in their personal life and work.
	Program participants' experiences with PRiN and COVID-19	Nurses reflected on posttraumatic growth following the program and recognised strengths gained from adversity: '*I never really thought about posttraumatic growth … the concept is relatively new to me, and it makes perfect sense … I've been separate from my parents for almost three years … because of the pandemic … what I've learnt from this very difficult period is that I'm stronger than I thought I was. I used to cry every day. I used to crumble down … what has changed is how I'm responding to this adverse episode in my life … I learnt to move on.*' (P7) '*… there was an incident at work where a person suicided … that was a traumatic experience … to keep myself in good spirits and move forward, I talked to family, or work colleagues to debrief … exercised … knew I did everything I could at that time, no point thinking of the 'ifs' or 'buts' … I was lucky to have done [the program] when the incident happened … others took longer [to recover]*' (P5) '*I was a carer for my ex-partner who attempted suicide … I learned from the program … I was more capable, to not be affected by personal experience, not bring it up, and try to relate to my clients when dealing with suicidal behaviours or thoughts … focus on the growth as well … learn from the experience …*' (P16) They also experienced growth from overcoming the trauma and challenges associated with COVID-19:		

		‘*I have experienced that [trauma] personally … working in a COVID ward in 2020 … I learnt so much … about how short life is … seen people passing away … I have to utilise my time properly because we never know what’s coming next minute.*’ (P12).		

Secondary outcome: Resilience	Process evaluation findings and exemplars		Integration	Meta-inference
	Type	**Findings and exemplars**		
Time 2 Est. effect 0.24 95% CI 0.01 to 0.46 p-value 0.04 **Time 3** Est. effect 0.3 95% CI 0.08 to 0.52 p-value 0.009 Resilience (recovery from stress and coping with stress) was statistically significantly higher in the intervention group at T2 & T3 (Foster, Shochet, et al., 2024).	**Participant satisfaction and acceptability**	The program was valuable in developing nurses' understanding of resilience (item mean score 4.7/5): '*It helped me become more resilient by learning skills of coping with stress.*'	Nurses experienced improved resilience, even when it was very challenging to maintain resilience during the pandemic, because they applied the knowledge and skills learnt from the program to cope with and recover from adversity at work. These included greater understanding of resilience, self-awareness of stress and using stress management strategies (e.g., deep breathing), seeking support from colleagues and family, drawing on personal strengths, being persistent and using positive self-talk.	**Confirmed:** Resilience improved through access to cognitive skills (e.g., cognitive reframing and positive self-talk) and stress management strategies and self-care, and seeking support from friends, family and colleagues.
	Program participants' experiences with PRiN and with COVID-19	Nurses used resilience skills and knowledge from the program (e.g., positive self-talk) to cope with and recover from adversity at work: '*I have a challenging client that shows up regularly … before, I was just reacting … and my stress levels were very high. Now I've got the awareness and the tools to go, "I can afford a few minutes for a few breaths and think about what to do."*' (P9) '*I started working in a different role … and felt really overwhelmed … In the beginning, I had negative self-talk, "Oh I don't know whether I will get it" … after doing the resilience program … I told myself "I would get there and must be kind to myself" … and communication was extremely important when talking with colleagues, especially in a new environment … I asked a lot of questions … and reached out for help …*' (P12) By using skills and knowledge such as being persistent and seeking support from colleagues and family, nurses were able to maintain their resilience against the challenges of COVID-19: '*… me being fresh out of university, a novice nurse, that work environment [COVID-19] was really challenging … that time I probably showed no resilience … was so close to giving up. But I didn't. I persisted … a really great educator helped me through the journey … I feel like I have shown how resilient I was, and that gives me motivation … if something challenging comes up [again], I can do this …*' (P12)		

		‘*[COVID-19] has definitely challenged my resilience. During the lockdowns, there were moments where I felt that I was probably depressed … very hard to maintain resilience, but it was definitely there throughout … [to stay resilient] I talked with my partner … confided in others … went for walks … spend time at home [with family] …*’ (P9)		

Secondary outcome: Workplace belonging	Process evaluation findings and exemplars		Integration	Meta-inference
	Type	**Findings and exemplars**		
Time 2 Est. effect 0.25 95% CI -0.07 to 0.58 p-value 0.119 **Time 3** Est. effect 0.34 95% CI 0.02 to 0.65 p-value 0.036 Workplace belonging (feelings of being accepted and valued by organisation) was statistically significantly higher in the intervention group at T3 but not T2 (Foster, Shochet, et al., 2024).	**Participant satisfaction and acceptability**	Nurses found PRiN beneficial for helping them feel '*valued at work.*' They stated that '*it is nice to participate [in the program] with colleagues at work … to increase feelings of belonging …*'	Some nurses felt the program improved their sense of belonging at work because the organisation provided the program, they attended it with their colleagues, and actively engaged more with work colleagues following completion of the program. However, nurses' sense of belonging in their teams and relationships with managers were also impacted by existing conflicts with management and by COVID-19 (e.g. social distancing measures disrupting team-based work).	**Expanded:** Despite COVID-19 impacting nurses' team-based work and existing conflicts with management, most participants experienced an improved sense of workplace belonging and connectedness to colleagues. This was related to attending the program with peers and feeling valued and supported by the organisation through having the opportunity to participate in the facilitator-led program.
	Program participants' experiences with PRiN and with COVID-19	Nurses felt more valued by the organisation because they perceived being offered the program as the organisation's commitment to supporting their resilience and wellbeing: '*The fact that [the organisation] offered [the PRiN program], that it was free … It just makes us feel a bit more cared for in the industry, that as an organisation they do care.*' (P11) Following the program, they actively engaged more with work colleagues which also fostered a stronger sense of connection and belonging: '*When I talk to someone in the team now, I am seriously engaged [in the conversation] … I'm feeling more connected with others in the team. So not just as part of team, but that you are a team …*' (P1) However, COVID-19 was disruptive to nurses' team-based work and connection with colleagues: '*Before the lockdown we had monthly team bonding exercises … We can't do those face-to-face anymore …*' (P5) '*When we were working from home [during COVID-19], it felt a bit stressful because the manager would demand to know what you had done in that day. Almost like they weren't really trusting me …*' (P13)		

		Additionally, some nurses continued to experience conflict with managers and felt undervalued at times: '*The other day, we were talking about changing the format of the paperwork. Management has a different view, but we're on the floor and know [it wouldn't work] … [management] are making these rules when they don't know how we're working on the floor. That's why we have been clashing with management…*' (P11)		

Secondary outcome: Wellbeing	Process evaluation findings and exemplars		Integration	Meta-inference
	Type	**Findings and exemplars**		
Time 2 Est. effect 9.2 95% CI 5 to 13.4 p-value 0.0001 **Time 3** Est. effect 7.6 95% CI 3.7 to 11.4 p-value 0.0003 Wellbeing (emotional, mental, social, and psychological) was statistically significantly higher in the intervention group at T2 & T3 (Foster, Shochet, et al., 2024).	**Participant satisfaction and acceptability**	The program was valuable in assisting nurses in developing an overall sense of wellbeing (item mean score 4.62/5) and in contributing to a positive outlook on their personal life (item mean score 4.30/5). The program emphasised '*... a focus on [own] wellbeing.*' This included '*self-care and its importance.'*, and *'... accessing clinical supervision [since doing the program].*	Nurses became more aware of the importance of positive wellbeing. They proactively engaged in wellbeing activities, such as prioritising their own wellbeing, actively seeking clinical supervision, engaging in leisure activities, cultivating self-compassion, and striving for a better work-life balance. Some also recognised the importance of social connection and proactively connected with their colleagues.	**Confirmed:** Wellbeing improved as nurses became more mindful of their personal wellbeing and proactively engaged in activities that promoted it (e.g., self-care, managing work-life balance, and fostering social connections).
	Barriers and facilitators to program implementation	Managers noticed that nurses were more mindful of their wellbeing following the program: '*... the grads who attended [the program] ... learnt to manage work-life balance ...*'		
	Program participants' experiences with PRiN	Following the program, nurses became more proactive in engaging in activities that promoted wellbeing. They used a range of strategies and resources for their emotional, psychological, and social wellbeing: '*... more mindful about taking time out on my days off for self-care, do nice things for myself apart from running around for everybody else ... a nice long walk ... go to church ... read a book ... catch up with family ...*' (P11) '*Even though I would promote to my patients to take time out and go for walks, I probably wouldn't have done that myself. That's one of the biggest things I got from [the program] ... those skills that I know like bread-and-butter and are effective and evidenced-based ... I implement them in my own working life.*' (P6) '*I am currently studying my Masters ... I was getting fatigued and going to burn out ... so I put the brake on and relaxed ... knowing I didn't need to push that hard, which I absolutely did last year ... I was more aware of my body clues, listen to them ... and not to overwork.*' (P4)		

		'*What I found [helpful in the program] was to recognise the support system … how to provide support to other, and how to provide support to yourself … self-care, work-life balance, exercise, sleep … talking to your supervisor … using clinical supervision … feeling more connected to the team … I believe relationships are very important.*' (P1)		

Outcome: Psychological distress	Process evaluation findings and exemplars		Integration	Meta-inference
	Type	**Findings and exemplars**		
Time 2 Est. effect -3.7 95% CI -6.2 to -1.3 p-value 0.004 **Time 3** Est. effect -4.2 95% CI -6.7 to -1.8 p-value 0.001 Psychological distress (non-specific psychological distress focusing on depression and anxiety) was statistically significantly lower in the intervention group at T2 & T3 (Foster, Shochet, et al., 2024).	**Barriers and facilitators to program implementation**	Nurse unit managers and team leaders noticed improvements in nurses' stress management capacity (item mean score 3.35/5): '*For one of [the program nurses], my clinical team and I noticed marked improvements in her anxiety …*'	Nurses had better self-awareness of body clues of distress and used stress management skills (e.g., deep breathing, physical activity), cognitive skills (e.g., cognitive reframing, positive self-talk, challenging negative-self talk), and accessed professional psychological support to manage their distress when facing workplace challenges.	**Confirmed:** Lower psychological distress was related to nurses using coping and stress management skills and applying cognitive strategies to manage their distress.
	Program participants' experiences with PRiN and with COVID-19	Nurses used stress management skills and cognitive strategies to manage distress: '*I tried to be in tune with body clues to reduce my stress level … I was doing medication in the high dependency area. People were refusing medications, and the environment was increasing in energy. I was feeling a bit anxious … I tried to self-regulate, breathed, and stayed focused … to think clearly.*' (P4) '*It's anxiety around meeting people with complex histories or presentations … forensic history, violence, drug use … reframing to manage that worry … "they've got significant forensic history but that isn't necessarily the person today'"* (P8) '*When I had back-to-back meetings, there was going to be conflict … I'd noticed physical cues of anxiety and stress … muscle tense, teeth clenching … I took time out in between each of them, go for a walk, get some fresh air … I probably wouldn't have done that [before the program]*' (P6) '*I had to be a coordinator in ICA [intensive care area] with just six months of experience … really nervous, "How am I supposed to do this? No one taught me …" The catastrophising process was going in my head. After the program, I had to coordinate several more times … the situation itself was the same … but I processed the situation better, like how I felt at that moment, and was less stressed.*' (P18)		

		Nurses also drew on organisational support to manage their distress in challenging circumstances: *[During COVID] 'I worked for the homeless team, and we weren't doing regular visits [with consumers] … only crisis work … It got quite stressful for everyone [in the team] … I had a couple of sessions through EAP [employee assistance program] with Converge …*' (P8)		

Integration of the proximal trial outcomes with process evaluation findings suggests that program nurses experienced significantly better coping self-efficacy compared to the control group because they had improved self-confidence in using cognitive skills (e.g., positive self-talk) and drawing on personal strengths, and employing effective communication skills (e.g., active listening skills). Subsequently, this improved their perceived ability to cope effectively with work and life challenges. For instance, some nurses felt more confident in taking on more demanding responsibilities, such as being in charge of shift, by self-reflecting on and challenging their negative self-talk to gain self-reassurance about their capability to handle workplace challenges. Improvements in nurses' stress-management capacity were noted by some managers and team leaders.

Further, following the program, nurses understood the importance of nurturing their own wellbeing. They proactively engaged in activities that were beneficial for their wellbeing, such as having personal time for leisure activities after work, connecting with friends, or going to church. As a result, they experienced better emotional, mental, social, and psychological wellbeing. Conversely, when they faced distressing situations in the workplace (e.g., high levels of interpersonal conflict during meetings), they were able to apply knowledge from the program, such as using the PRiN model to identify body signs of stress and using relaxation strategies (e.g., breathing, managing anxious self-talk) to manage their stress. Some also used external support (such as the Employee Assistance Program or mutually supportive relationships with colleagues) to cope with challenges at work. Using these strategies, nurses in the intervention group had lower levels of psychological distress compared to their peers in the control group. Managers and team leaders also noticed that nurses were more mindful of their wellbeing and had improved stress-management capacity following the program.

Similarly, even though nurses reported that it was more difficult to build and maintain resilience during the pandemic (because COVID-19 not only impacted their work and life but also disrupted their ways of coping with adversity), the resilience outcome improved for program nurses and was sustained at three months after the program. This was attributed to the use of personal strategies (e.g., cognitive reframing, relaxation, and deep breathing) and external resources (e.g., support from family) to cope with challenges (e.g., caring for consumers with challenging behaviours) and recover from adversity. Regarding posttraumatic growth, after learning about the concept, nurses reported being able to reflect on and make sense of their experiences in overcoming past and recent trauma. This self-reflection and sense-making process allowed them to draw out strengths from adversity by recognising their personal strengths (e.g., realising that they were stronger than they perceived themselves to be) and having a greater appreciation for life (e.g., valuing each day more).

Workplace belonging improved at three months follow-up only. Integration indicated that some nurses experienced a greater sense of belonging at work after the program because they felt valued and supported by the organisation through the opportunity to participate in the program. They attended the program with their colleagues and actively built stronger connection with peers and in their teams following the program. However, other nurses reported that they did not experience a sense of belonging due to existing conflict with managers and/or the organisation, or they did not feel valued at work, or their working relationship with their manager was impacted due to social distancing during COVID-19.

8.2.2 Meta-inferences of Distal Outcomes

Table 8.3: Joint Display Table for Integrated Findings on Distal Outcomes

Secondary outcome: Emotional intelligence behaviours	**Process evaluation findings and exemplars**		**Integration**	**Meta-inference**
	Dataset	**Findings and exemplars**		
Time 2 Est. effect 3.5 95% CI 0.6 to 6.5 p-value 0.02 **Time 3** Est. effect 2.3 95% CI -0.4 to 5 p-value 0.093 Emotional intelligence behaviours (frequency and typicality of emotionally intelligent functioning and behaviours) at work was statistically significantly higher in the intervention group at T2 but not T3	**Participant satisfaction and acceptability**	Nurses found PRiN beneficial for gaining '*a greater understanding of how my emotions affect others.*'	Nurses had increased emotional self-awareness and awareness of how their emotions affected others, greater emotional self-management, and self-control (e.g., being able to keep calm using deep breathing to handle stressful situations successfully), and greater emotional awareness and emotional management of others (e.g., recognising anger and distress in others and coaching them to effectively manage the emotions appropriately). However, program content related to emotional intelligence behaviours (i.e., practice empathic communication) was not fully completed as intended in a few programs, because nurses believed they were already	**Expanded:** Emotional intelligence behaviours improved through greater emotional self-awareness and awareness of others, and use of cognitive strategies (e.g., cognitive reframing) and relaxation skills (e.g., deep breathing) to self-regulate emotions and to coach others to regulate their emotions.
	Barriers and facilitators to program implementation	Managers noticed improvements in nurses' emotional intelligence: *'... for one [nurse], she has more emotional intelligence around different situations.*'		
	Program fidelity	*Practice empathic communication* unit had the lowest level of completion (fully completed in only three out of seven programs) compared to other units. One facilitator commented 'The group felt that it [practice empathic communication] was not needed for MHNs as it's part of their daily practice.' (Program 3)		
	Program participants' experiences with PRiN	Nurses had greater emotional awareness of self and others: '*... lots of things can challenge nurses coming into a new workplace ... having that tool [the PRiN model] would be useful ... to reflect on the emotional response being elicited: "This is happening because my brain's telling me this and I can actually do something differently."*' (P3) '*I feel somebody is getting overwhelmed particularly now with COVID lockdowns and being really understaffed ... they really struggle ... I can help them think of their thought process.*' (P5)		

(Foster, Shochet, et al., 2024).		They used several strategies and skills to self-regulate their emotions and to help others to regulate their emotions: '*I struggled with consumers with heavy substance use & multiple admissions ... upsetting to see them [relapse] & verbally abusive … hard to be empathetic … so I used the PRiN model … "they've been through a lot" … to be more empathetic*' (P14) '*When [consumers] are feeling angry or distressed … I try to transfer the skills I learnt [in the program] to them … tell them to take a step back before reacting … deep breathing … think about what they are doing … to be less reactive …*' (P18) '*Have a moment to stop and think … rather than jumping into arguments with other staff … clinical reviews sometimes get a bit heated … because we're all quite passionate individuals. We all want the best for our consumers … so, not being emotional … and listen to someone, "What are you trying to tell me?"*" (P8)	familiar with empathic communication as part of their practice. This might have contributed to emotional intelligence behaviours outcome not being sustained through to T3.	

Outcome: Turnover intention	Process evaluation findings and exemplars		Integration	Meta-inference
	Dataset	**Findings and exemplars**		
Time 2 Est. effect -0.65 95% CI -2.22 to 0.91 p-value 0.406 **Time 3** Est. effect 0.17 95% CI -1.36 to 1.71 p-value 0.822 There was no statistically significant difference between the intervention and control groups at T2 & T3 for turnover intention (person's intention to leave current organisation and seek new job) (Foster, Shochet, et al., 2024).	**Participant satisfaction and acceptability**	The program contributed to a positive outlook for nurses' future as an employee in the current organisation (item mean score 4.57/5)	The program contributed to a positive outlook on their employment for some program nurses (because they learnt to cope better with workplace challenges). However, nurses' turnover intention was also influenced by perceived job fit, and other structural factors such as existing negative workplace culture, interpersonal conflicts, and the inability to practice effectively due to the pandemic. For some, other jobs offered more benefits than their existing job.	**Expanded:** Nurses' turnover intention did not significantly change in either group. Turnover was related to internal factors, including job fit, structural issues (e.g., structural disaggregation) in the organisation, and dealing with COVID-19 challenges (e.g., heavy demands), and external factors, including greater benefits in other jobs.
	Program participants' experiences with PRiN and COVID-19	The program contributed to a positive outlook on their employment: '*It [the program] gave me more strength to stay in this career longer … sometimes I don't feel fit for this job… that I'm not terribly good at it. But doing this program gave me hope that I might be able to grow … to settle in this environment emotionally.*' (P18) However, there were existing internal workplace issues (such as negative culture) that could not be addressed by the program: '*Sometimes you find yourself in a toxic environment … good to have either an exit strategy, or strategies to maintain strength while you are part of that toxicity … some people do tolerate them, but others tolerate by leaving.*' (P3) Other jobs may offer greater benefits: '*I really enjoy my job here. I love the team … but I've been offered a job … with perks that were just too good to miss … working from home once a week … travel in work's time … gives me two hours back per day that I can be more family focused.*' (P13) Significant organisational disruptions during COVID-19 may have also contributed to turnover intention: '*When we turned into a [suspected COVID] ward, some people quit … because they didn't want to work in a COVID ward …*		

		that affected the workforce, and we were short staffed all the time.' (P19)		

Integration of the two distal outcomes with the relevant process evaluation findings indicated that the program improved nurses' emotional intelligence behaviours but had no statistically significant effect on their turnover intention. Following the program, nurses displayed a greater awareness of their own emotions and the emotions of their colleagues during emotionally challenging situations. Nurses employed cognitive strategies (e.g., cognitive reframing) and relaxation skills (e.g., deep breathing) to self-regulate negative emotions experienced in interpersonal relationships with colleagues, and in therapeutic interactions with consumers, to maintain empathy and increase compassion for others. They were also able to help consumers and colleagues manage their emotions (e.g., via coaching of self-regulatory strategies). These emotionally intelligent behaviours at work were skills that were taught and enhanced through PRiN program education. They were not sustained at three months, possibly because program content related to emotional intelligence behaviours (i.e., empathic communication) was not fully completed as intended in a few programs, as nurses believed they were already familiar with empathic communication as part of their nursing practice.

There was no improvement in turnover intention after the program for either the intervention group or the control group. Notably, the turnover intention for both groups was low at baseline (Foster, Shakespeare-Finch, et al., 2024). Integration findings indicate that some nurses found PRiN contributed to a positive outlook on their employment because they could cope better with workplace challenges. However, turnover intention was also influenced by existing structural issues such as interpersonal conflict, negative workplace culture, and being unable to practice and deliver care effectively due to COVID-19. In addition, while not captured in the data, during the process evaluation period, program nurses also experienced structural disaggregation of the health service, with several area services splitting off from the larger health service and nurses being relocated to different roles. These

internal factors may have had more impact on nurses than the program. Further, external factors including higher pay and better job fit elsewhere, also played a role in some nurses' decision to leave.

8.3. Chapter Summary

This chapter described the integration of trial outcomes with process evaluation findings to generate meta-inferences (or overall conclusions) to address the integration objective, i.e., to explore factors in the implementation of the PRiN program that might help explain variation in trial outcomes between the intervention and control groups. These meta-inferences indicate that nurses felt more confident in their ability to cope with workplace challenges by employing self-regulatory and coping strategies learnt or strengthened through the program. They experienced greater wellbeing through proactively engaging in activities that promoted their psychological, emotional, and social wellbeing, and could manage their mental distress more effectively when experiencing challenges. They perceived the program as valuable for developing an understanding of resilience and drew on a range of personal and external resources to maintain their resilience. They became more aware of their own emotions and the emotions of others, enabling them to regulate their emotions more effectively in challenging situations and to help others manage negative emotions. By learning about posttraumatic growth, nurses who had experienced trauma were able to reflect on their personal growth, while those without prior experience of trauma recognised that positive outcomes could potentially arise from traumatic events. Finally, existing structural issues in the health service, interpersonal conflicts between nurses and their managers, and the pandemic appear to have impacted nurses' sense of workplace belonging and their turnover intention. Overall, these meta-inferences suggest that nurses found the PRiN program relevant for supporting them in building and maintaining their wellbeing and resilience and their capacity to deal with adversity.

In the next chapter, the implications of these overall conclusions are discussed in relation to the wider mental health nursing and nursing literature. Additionally, the process evaluation findings from the previous chapters are mapped to Normalisation Process Theory (NPT), the theoretical framework for the study. The mapping of findings to NPT deepens the understanding of PRiN implementation, including how the program was implemented and the contextual barriers and facilitators to program implementation, which can inform future implementation of the program in health services.

Chapter 9: Discussion

9.1. Introduction

The thesis aims were to i) identify factors that may help explain variation in outcomes between participants in the intervention and control arms of the randomised controlled trial of the PRiN program, and ii) to evaluate the PRiN program implementation by assessing program fidelity, satisfaction, and acceptability at the mental health service where PRiN was conducted. The meta-inferences presented in Chapter 8 are discussed here in the context of the wider mental health nursing and nursing literature to address the first thesis aim. The two main process evaluation findings (or overall conclusions) that relate to program implementation in the health service (see Overall Summary of Process Evaluation Findings) are interpreted through the lens of the Normalisation Process Theory and discussed in relation to the implementation science literature. This approach is used to address the second thesis aim by deepening understanding of important factors to consider when implementing PRiN at health services. The recommendations for policy, practice, and future implementation are described in the following chapter (Chapter 10).

9.2. Thesis Aim 1: Variation in Trial Outcomes – Meta-Inferences

These findings represent new knowledge in the field through applying the findings from the process evaluation to help explain the outcomes from the trial of the PRiN intervention. Meta-inferences (Table 9.1), which were derived from the integration of the process evaluation findings with participant trial outcomes, are discussed in relation to the literature. Notably, in both the nursing literature (Kunzler et al., 2022) and mental health nursing specific literature (Bui et al., 2023b; Foster et al., 2019), there are no reported process evaluations of trials of resilience interventions. As reported in Chapter 2, in mental health nursing there are two feasibility studies (Foster, Shochet, Wurfl, et al., 2018; Henshall et al.,

2020) and one single-site pilot randomised controlled trial (Henshall et al., 2023) that have reported on resilience interventions for MHNs. All these studies included some evaluation findings (e.g., acceptability) where comparisons to the meta-inferences can be made. This is consistent with French et al. (2020), who identified that process evaluations are often less reported than outcome evaluations (i.e., randomised controlled trials) in the literature. This thesis, therefore, supports the relevance of including process evaluations as standard parallel studies alongside trials for future resilience interventions.

Table 9.1: Summary of Meta-inferences

Outcomes		Meta-inferences
Proximal	Coping self-efficacy (Primary)	Ability to cope with challenges was strengthened by improved self-confidence through using cognitive skills, effective communication and problem-solving skills, and drawing on personal strengths.
	Wellbeing	Wellbeing improved as nurses became more mindful of their personal wellbeing and proactively engaged in activities that promoted it (e.g., self-care, managing work-life balance, and fostering social connections).
	Resilience	Resilience improved through access to cognitive skills (e.g., cognitive reframing and positive self-talk) and stress management strategies and self-care, and seeking support from friends, family and colleagues.
	Posttraumatic growth	Posttraumatic growth increased through improved understanding of the concept and reflecting on recovery and growth and strengths nurses had gained from dealing with past trauma in their personal life and work.
	Workplace belonging	Despite COVID-19 impacting nurses' team-based work and existing conflicts with management, most participants experienced an improved sense of workplace belonging and connectedness to colleagues. This was related to attending the program with peers and feeling valued and supported by the organisation through having the opportunity to participate in the facilitator-led program.
	Psychological distress	Lower psychological distress was related to nurses using coping and stress management skills and applying cognitive strategies to manage their distress.
Distal	Emotional intelligence behaviours	Emotional intelligence behaviours improved through greater emotional self-awareness and awareness of others, and use of cognitive strategies (e.g., cognitive reframing) and relaxation skills (e.g., deep breathing) to self-regulate emotions and to coach others to regulate their emotions.
	Turnover intention	Nurses' turnover intention did not significantly change in either group. Turnover was related to internal factors, including job fit, structural issues (e.g., structural disaggregation) in the organisation, and dealing with COVID-19 challenges (e.g., heavy demands), and external factors, including greater benefits in other jobs.

Overall, the meta-inferences indicated that the PRiN program significantly improved nurses' coping self-efficacy, wellbeing, resilience, posttraumatic growth, and reduced psychological distress. Nurses reported learning useful skills and strategies from the PRiN program (e.g., cognitive reframing, coping skills, relaxation skills, stress management skills, and accessing external support). These skills helped them cope with stress, self-regulate their emotions, proactively engage in activities that promoted their psychological, emotional, and social wellbeing, and recognise personal strengths from mastery and growth over past challenges. Nurses also reported practising interpersonal skills and empathic communication in the program and being able to apply them at work to improve their emotional intelligence behaviours and sense of workplace belonging. The meta-inference findings are discussed below in the context of the wider literature.

9.2.1 Meta-inferences of Proximal Outcomes

9.2.1.1 | Coping Self-Efficacy. The meta-inference for coping self-efficacy indicated that the PRiN program provided program nurses with knowledge (e.g., on stress) and skills (e.g., to self-care) to cope, get support (e.g., from friends, family, and organisational support such as the employee assistance service), and to identify and draw on their personal strengths to deal with challenges and adversity. Subsequently, nurses' self-confidence and perceived ability to cope with challenges (i.e., coping self-efficacy) were improved. This finding is consistent with the pilot study of the antecedent Promoting Adult Resilience (PAR) program, where nurses found the resilience strategies from the program (e.g., positive self-talk and managing emotions) useful to cope with challenges at work (Foster, Cuzzillo, et al., 2018), and their coping self-efficacy significantly increased with a moderate effect size ($r = 0.38$) (Foster, Shochet, Wurfl, et al., 2018). Bernburg et al.'s (2019) pilot randomised controlled study on a mental health promotion program for psychiatric nurses, which aimed to improve resilience, also improved nurses' self-efficacy (measured with Self-Efficacy, Optimism and

Pessimism scale; SWOP-K9) up to six months after the intervention (d = 0.8 at three months follow-up and d = 0.04 at six months follow-up). However, the authors did not provide process evaluation findings (i.e. did not report how the intervention improved this outcome). There is no other directly comparable mental health nursing or nursing literature to draw on in respect to these findings.

Coping self-efficacy is, however, a known primary resilience-promoting factor (Schäfer et al., 2023) and relates to an individual's beliefs about their capacity to manage stressful situations (Chesney et al., 2006). Self-efficacy can be a predictor of successful adaptation (i.e., resilience) because individuals' beliefs about their ability to manage challenges correlate with the resources they are able to access to cope with these challenges (Benight & Cieslak, 2011). Additionally, coping self-efficacy is an indicator of a sense of agency (i.e., feeling of control over a situation), which is another important resilience factor (Schäfer et al., 2023). By strengthening the personal (e.g., self-regulatory skills and stress management strategies) and external resources (e.g., social support) that nurses can use during challenging situations, the PRiN program improved their sense of agency and control over the situations, helping them feel more confident in their capacity to manage stressful situations and recover from adversity. This is consistent with the aims and theoretical underpinnings of the PRiN program (Shochet et al., 2011) and with the processes identified in workplace resilience theory (McLarnon and Rothstein (2013). Improving coping self-efficacy also has an important implication for nurses' mental health, as Clauss et al. (2021) contend that workers with high self-efficacy may worry less about work during off-job hours because they have higher psychological detachment from work and believe in their capacities to address work-related problems successfully.

9.2.1.2 | Posttraumatic Growth. The meta-inference indicated that by reflecting on previous traumatic experiences and how they successfully overcame them, program nurses were able to recognise their growth from trauma. Some experienced a change in life priorities, a greater appreciation for interpersonal relationships, and a newfound sense of their personal strengths. These represent different domains of PTG, which is a construct considered distinct from resilience (Tedeschi et al., 2018). Resilient individuals (i.e., those who effectively engage in resilience processes to recover from adversity) may also exhibit PTG when experiencing events that are traumatic enough to shatter their pre-existing schemas/beliefs about the world (Tedeschi et al., 2018). However, cross-sectional studies in the wider literature investigating the relationship between resilience and PTG have shown mixed findings (Tedeschi et al., 2018, p. 70). In mental health nursing, three cross-sectional studies have examined the relationship between the two constructs, but their findings were inconsistent. Foster, Shakespeare-Finch, et al. (2024) and Itzhaki et al. (2015), reported no correlation between resilience and PTG in cohorts of n = 144 Australian MHNs and n = 118 Israeli MHNs, while Dahan et al. (2022) reported a positive correlation (r_s = 0.24) between resilience and PTG. As mentioned in Chapter 2.4, further research is needed to explore this relationship. The evidence in this thesis, however, indicates it is beneficial to include a PTG component in resilience interventions for MHNs.

The meta-inference on PTG expands current understanding of the two constructs by illustrating how resilience interventions for MHNs can promote PTG. Integration showed that when program nurses engaged in self-regulatory processes to maintain resilience in the workplace (see Figure 1.1), they also reflected on their experiences of overcoming past trauma to identify effective coping strategies for current adversity. This personal reflection provided them with a sense of agency (i.e., giving them a sense of control over how they could handle challenges) and self-confidence to cope with the challenges (i.e. coping self-

efficacy. As discussed above, a sense of agency and coping self-efficacy are resilience factors (King & Rothstein, 2010), that have been linked to the development of PTG (Finstad et al., 2021). For instance, a newfound sense of personal strength (i.e., 'I can survive anything because I have survived this traumatic event') is a common finding in PTG research (Tedeschi et al., 2018). However, of the 17 resilience interventions that Kunzler et al. (2022) evaluated in their meta-analysis, only one intervention included a PTG component (Cieslak et al., 2016), which was not effective at strengthening PTG in health and human service professionals (including nurses) experiencing trauma at work. PTG was not included in Henshall et al.'s (2023) resilience intervention.

Resilience interventions that include a component to promote PTG among MHNs are highly relevant to the mental health nursing workforce, as this addresses MHNs' frequent exposure to trauma in the workplace (Itzhaki et al., 2018; Itzhaki et al., 2015). PTG is also relevant in the context of COVID-19, which has been recognised as a traumatic event (Kaubisch et al., 2022), and healthcare workers had an increased risk of developing PTSD during this period (Andhavarapu et al., 2022). As identified in Chapter 1.6.3 and Chapter 1.7, the posttraumatic growth module from an antecedent version of PAR (the Promoting Resilience Officers; Shochet et al., 2011) was included in the PAR pilot study but not formally measured (Foster, Shochet, Wurfl, et al., 2018). In the pilot, nurses perceived the program as a reflective space for positive learnings about their personal growth (Foster, Cuzzillo, et al., 2018), and the PTG module was formally added to the PRiN program during program adaptation prior to the PRiN trial. This thesis adds valuable new knowledge on the inclusion of PTG in resilience interventions in nursing.

9.2.1.3 | Resilience. The meta-inference indicated that program nurses' resilience improved through the purposeful use of cognitive skills (e.g., cognitive reframing and

positive self-talk), stress management strategies, and accessing emotional support from friends and family. Additionally, nurses reflected on the strategies they used to overcome COVID-19-related challenges that interfered with their ability to provide care to consumers, which helped build their professional practice. They reported greater confidence and readiness to tackle future challenges, as well as increased creativity and flexibility in their work approach.

Consistent with this finding, in the pilot study of the PRiN program (Foster, Shochet, Wurfl, et al., 2018), nurses strengthened their resilience using existing or newly learnt resilience skills (e.g., drawing on and providing support to colleagues). This finding also reflects McLarnon and Rothstein's (2013) theoretical model of the workplace resilience process that involves coping with occupational adversities (e.g., interpersonal conflict) using personal protective resources (e.g., empathic communication techniques) and external supports to bring about positive outcomes such as wellbeing or improved work performance. In contrast, Bernburg et al.'s (2019) mental health promotion intervention improved MHNs' resilience (measured with the Brief Resilient Coping Scale) at three months follow-up (d = 0.8), but not at six and 12 months. However, a process evaluation was not conducted, and the authors did not further explain this result. Henshall et al. (2023) similarly did not collect this data and did not offer an explanation as to why they thought their resilience intervention for MHNs had no effect on nurses' resilience. However, their evaluation of their online program's acceptability indicated that out of the n = 33 participants who completed the evaluation survey, n = 24 (72.8%) felt that the intervention was important for improving their resilience.

The resilience meta-inference here expands on current conceptualisations and understandings of resilience. Aside from being conceptualised as either an outcome or a

process, resilience has also been identified in a typology of three distinct forms: recovery, resistance, and reconfiguration (Lepore & Revenson, 2006). *Recovery* indicates elasticity, where individuals' level of functioning is disrupted by adversity but returns to normal after the adversity has passed (Lepore & Revenson, 2006). *Resistance* is captured in Bonanno's (2004) conceptualisation of resilience, which suggests that individuals demonstrate resilience if they maintain normal functioning during and after an adverse event. *Reconfiguration* indicates that individuals can reconfigure their thoughts, beliefs, and behaviours following an adverse event, enabling them to grow and become more adept at withstanding future adversity (Walsh, 2016b, pp. 3-5). While this form of resilience has some similarities to PTG, it is distinct from PTG because it can occur in the absence of trauma (Lepore & Revenson, 2006). It appears that some nurses in the current study may have experienced this reconfiguration form of resilience. The resilience meta-inference indicated that nurses were able to reflect on their experiences in overcoming non-traumatic, day-to-day challenges in the workplace (such as starting a new role or working with consumers with challenging behaviours) and in this process, grew in their capacity to manage adversity. This growth can be identified in the strategies they used to cope (e.g., 'asking a lot of questions' and 'reaching out for help') and in their recognition of personal changes and development. The meta-inference supports the notion that growth can be an outcome of a resilience process that is related to but distinct from that of posttraumatic growth, can help to strengthen nurses' resilience, and can be nurtured, e.g., through reflective practices and clinical supervision.

9.2.1.4 | Workplace Belonging. The meta-inference suggested that program nurses had a stronger sense of workplace belonging (though only at three months following the program) because they felt valued and supported when the organisation offered the program as part of their professional self-care and development. The feeling of being valued and belonging to the organisation also came from being in a facilitator-led and peer group

program where they were able to connect with other colleagues who were willing to share and discuss their struggles at work and in life. This is an important and novel contribution to knowledge in the field of mental health nursing. MHNs may often feel undervalued by their organisation due to a lack of support (from managers, colleagues, and the organisation) and high rates of interpersonal conflict and bullying among colleagues (Cranage & Foster, 2022; Delgado et al., 2022; O'Malley et al., 2024). A strong sense of workplace belonging has previously been linked with reduced psychological distress and higher resilience levels in emergency service workers (Shakespeare-Finch & Daley, 2017), and improved professional quality of life (e.g., by reducing burnout) among mental health workers (Somoray et al., 2017). A stronger sense of workplace belonging contributes to an individual's flourishing and psychological and social wellbeing (Westerhof & Keyes, 2010). In mental health nursing, a higher sense of belonging has been associated with several positive outcomes, such as lower psychological distress ($r = -0.20$), higher wellbeing ($r = 0.37$), higher emotional intelligence ($r = 0.44$), higher coping self-efficacy ($r = 0.25$), higher resilience ($r = 0.3$), and lower turnover intention ($r = -0.31$) (Foster, Shakespeare-Finch, et al., 2024).

Workplace belonging has not been measured in other resilience interventions in mental health nursing (Bernburg et al., 2019; Henshall et al., 2020; Henshall et al., 2023) or in the wider field of nursing (Kunzler et al., 2022). Henshall et al.'s (2023) resilience intervention included a component on nurturing positive professional relationships, which is part of a broader system of social supports that bolsters resilience processes (McLarnon & Rothstein, 2013) and has been suggested as a self-development strategy for nurses to build resilience to workplace adversity (Jackson et al., 2007). However, nurturing positive professional relationships with colleagues is conceptually different from workplace belonging, which concerns nurses' feelings of being accepted and valued by their organisation (Cockshaw & Shochet, 2010).

In the PRiN trial, while it is unclear why workplace belonging did not improve until the three-month follow-up (Foster, Shochet, et al., 2024), the meta-inference for this outcome suggested that during the trial, nurses' capacity to build a stronger sense of workplace belonging (e.g., via teamwork and team-bonding activities) was impacted by the pandemic. This was due to social distancing requirements in the workplace causing social disconnection between nurses and their colleagues, and between nurses and the organisation (Bui et al., 2023a). Additionally, some program nurses reported ongoing conflicts with colleagues (especially managers) and feeling undervalued by their organisation. This is consistent with existing evidence on MHNs' experiences with negative workplace culture, including undermining or blaming behaviours from management towards staff (Cooper et al., 2024; Cranage & Foster, 2022). Cleary et al. (2023) suggest that addressing a negative workplace culture in mental health nursing requires multi-faceted organisational approaches such as supporting nurses' resilience, encouraging reflective practice, fostering a culture of respect and compassion, enhancing interpersonal communication skills, and promoting the reporting of undermining behaviours. The implementation of a resilience program like PRiN, therefore, is one component of a larger organisational approach that is needed to enhance workplace belonging and address negative workplace cultures. A resilience program focused on individual wellbeing is not designed to address larger structural factors within the organisation.

9.2.1.5 | Wellbeing. Wellbeing may include hedonic (or emotional) wellbeing, and eudaimonic (i.e., psychological and social) wellbeing (Westerhof & Keyes, 2010). The wellbeing measure used in the trial (MHC-SF) included all three components. The meta-inference for wellbeing indicated that nurses' emotional, psychological, and social wellbeing improved because they were more mindful of the need to proactively engage in activities (such as clinical supervision, managing work-life balance, and nurturing social connections)

that promoted all these aspects of wellbeing. In contrast to the PRiN trial, nurses in the pilot PAR study showed no changes to their wellbeing (measured by Ryff's Scales of Psychological Well-Being) following the PAR program (Foster, Shochet, Wurfl, et al., 2018). However, nurses identified that the PAR program reinforced the importance of regular self-care to maintain their wellbeing (Foster, Cuzzillo, et al., 2018). In comparison, Henshall et al.'s (2023) online resilience REsOluTioN program provided MHNs with strategies to maintain work-life balance, which is an aspect of wellbeing. Their trial though indicated no improvements in wellbeing (measured by Warwick-Edinburgh Mental Wellbeing Scale) following the program (Henshall et al., 2023).

One explanation for the differences in wellbeing outcomes between the PRiN trial and these two intervention studies is the use of different wellbeing scales with varying conceptualisations of wellbeing. Another explanation is that a range of resilience-promoting factors addressed by a resilience intervention, including the PRiN program, contribute to wellbeing. In the PRiN program, workplace belonging and coping self-efficacy, which were key components of the program, were associated with wellbeing. The findings at Time 1 in the PRiN trial indicated associations between wellbeing and these other outcomes. Wellbeing was positively associated with coping self-efficacy ($r = 0.58$), PTG ($r = 0.38$), resilience ($r = 0.40$), and sense of belonging ($r = 0.37$) (Foster, Shakespeare-Finch, et al., 2024). This is consistent with this wellbeing meta-inference/overall conclusion, which indicates that, due to the program, nurses had a new sense of mastery and confidence in their capacity to maintain their wellbeing because they had the skills and social support to cope with challenges. In the program, nurses were encouraged to draw on their identified personal strengths and discussed strategies to create a personal plan for dealing with problems they faced.

9.2.1.6 | Psychological Distress. Psychological distress in this thesis is defined as non-specific distress focusing on depression and anxiety (Andrews & Slade, 2001). Its presence may indicate less positive adaptation to adversity (i.e. less resilience). The meta-inference indicated that program nurses experienced less psychological distress following the program by having better self-awareness of their body clues of stress and through drawing on stress management strategies (such as deep breathing) and cognitive self-regulation (e.g., challenging negative self-talk) to tackle stressful situations at work (e.g., managing acutely unwell consumers) and in their personal life (e.g., resolving conflict with their partner). These are skills directly targeted by the PRiN program. In the pilot study of the antecedent PAR program (Foster, Shochet, Wurfl, et al., 2018), psychological distress was assessed using the Depression, Anxiety, and Stress (DASS-21) scale, so a direct comparison with the 10-item Kessler Psychological Distress Scale (K10) used in the trial cannot be made. However, nurses' stress levels significantly reduced three months following the PAR program (r = 0.39). There were no significant changes in depression or anxiety. In contrast, Henshall et al. (2020) and Henshall et al. (2023) did not measure mental distress in their studies. Kunzler et al.'s (2022) meta-analyses reported that out of 24 studies, only seven showed evidence of resilience training effects on nurses' anxiety (standardised mean difference = –0.59, p = 0.02) (Chesak et al., 2020; Chesak et al., 2015) and stress (standardised mean difference = –0.49, p = 0.006) (Bernburg et al., 2019; Chesak et al., 2020; Chesak et al., 2015; Lin et al., 2019; Pehlivan & Güner, 2020), at short-term follow-up (i.e., ≤ 3 months).

Lowering mental and emotional distress is one of the hoped-for outcomes for resilience interventions in mental health nursing and the wider field of nursing (Kunzler et al., 2022; Zhai et al., 2021). Mental health nurses are known to experience high levels of distress and poor mental health (Delgado et al., 2021; Foster, Roche, et al., 2021), especially in the post-COVID-19 period (King et al., 2022). Psychological distress has been found to have

negative associations with MHNs' mental and emotional wellbeing ($r = –0.58$) (Foster, Shakespeare-Finch, et al., 2024). Additionally, lowering psychological distress has been associated with a lower intention among MHNs to leave their current organisation and seek other job opportunities ($r = 0.33$) (Foster, Shakespeare-Finch, et al., 2024). The finding in this thesis that the PRiN resilience intervention was able to influence MHNs' levels of psychological distress through providing them with coping and stress management skills and cognitive strategies to manage their distress, is a valuable new contribution to knowledge. This emphasises the value of resilience interventions in addressing MHNs' high levels of psychological distress.

9.2.2 Meta-inferences of Distal Outcomes

9.2.2.1 | Emotional Intelligence Behaviours. The meta-inference revealed that program nurses had a greater awareness of their own emotions and the emotions of others following the program. Emotional intelligence is a key component of the PRiN program. Nurses learnt and applied cognitive self-regulatory strategies (e.g., cognitive reframing) and stress management skills (e.g., deep breathing) to help regulate their own emotions and to help others regulate their emotions, particularly when staff and consumers were facing significant disruptions and changes due to the pandemic (Bui et al., 2023a). Emotional intelligence is recognised as a key resilience factor (Foster & Robinson, 2014) and is part of an individual's personal resources for coping with adversity (McLarnon & Rothstein, 2013). Emotional intelligence involves an individual's ability to perceive and understand the emotions of themselves and others, to effectively express, manage, and control their emotions, to consider emotional information when making decisions, and to positively influence others' emotions (Palmer et al., 2009). This promotes resilience through emotional regulation by facilitating both emotion-focused and problem-focused coping (Polizzi & Lynn, 2021). King and Rothstein (2010) posited that when facing adversity and setbacks (e.g., a

demotion at work) that may evoke intense negative emotions like anxiety and anger, individuals need to recognise their feelings and thoughts, and use appropriate self-regulation strategies (e.g., cognitive reappraisal) to maintain their resilience (Polizzi & Lynn, 2021).

Similar to the PRiN trial, Khoshnazary et al.'s (2016) randomised controlled trial tested a resilience intervention for n = 76 Iranian MHNs that specifically focused on emotional intelligence skills, teaching them three of 15 emotional intelligence-enhancing skills from the Bar-On model of emotional-social intelligence. The authors reported significant improvements in nurses' emotional intelligence (Bar-on emotional intelligence) and resilience (CD-RISC) following the intervention, but no process evaluation findings were available to help explain these outcomes. Henshall et al. (2023) also included emotional intelligence as a component in their resilience intervention, which was rated 'most favourably' by 75.8% of the participating MHNs, but the outcome itself was not measured. No other resilience interventions in nursing or mental health nursing address emotional intelligence (Bui et al., 2023b; Kunzler et al., 2022; Yu et al., 2024).

MHNs' emotional intelligence behaviours at work are a key aspect of their interpersonal practice and therapeutic effectiveness, which is why emotional intelligence behaviours in the PRiN trial were used as a proxy for practice. Emotional intelligence behaviours are essential for effective clinical practice, as nurses are required to manage their emotions and address the emotions of their colleagues and consumers during challenging interpersonal encounters or conflicts, and within therapeutic relationships (Basogul et al., 2019; Sharrock, 2021). This is particularly important when MHNs work with consumers experiencing emotional dysregulation (as often occurs in mental health related to trauma and/or mental distress) (Delgado et al., 2022) or those who were acutely unwell or escalating (in respect to aggression and violence) (Cranage & Foster, 2022).

It should also be noted that empathy is a component of emotional intelligence (Rosaria et al., 2019). However, fidelity findings (Chapter 5.3.2.1) suggested that content on empathic communication was not completed in some programs because facilitators and participants assumed that MHNs possessed a high level of empathy and behaved empathically as part of their practice. These findings contrast with evidence in the literature showing that MHNs do not necessarily always display a high level of empathy in their clinical work, e.g., when working with consumers with complex histories and challenging behaviours, or when MHNs experience burnout (Anandan et al., 2024; Román-Sánchez et al., 2022). Therefore, it is important that empathy continues to be a delivered component in the PRiN program and should not be assumed that content on empathy is unnecessary for MHNs.

9.2.2.2 | Turnover Intention. The meta-inference for turnover intention suggested that even though there was no significant difference in turnover intention between the program and control groups (Foster, Shochet, et al., 2024), the program contributed to nurses having a more positive outlook on their employment in the current organisation, and they could cope better with workplace challenges. This is useful knowledge that can inform future measurement of the impacts of resilience interventions on turnover intent. No other resilience interventions for nurses in general or MHNs have measured turnover intention (Henshall et al., 2023; Kunzler et al., 2022; Yu et al., 2024). It is relevant to note that nurses in both the intervention and control groups had low turnover intention at baseline (Foster, Shakespeare-Finch, et al., 2024), so the lack of significant difference in turnover intention between the two groups is perhaps not surprising.

The turnover intention meta-inference indicated that nurses' intention to leave the organisation was influenced by factors outside the PRiN program focus, such as a lack of perceived job fit, existing negative workplace culture and conflicts, greater job benefits at

other organisations, and structural changes at the organisation (i.e., mental health wards turning into COVID-19 wards to accommodate COVID-19 demands). These findings are consistent with the literature, which indicates that MHNs' intention to leave can be influenced by heavy demands (Jiang et al., 2019; Kagwe et al., 2019), better pay at other organisations (Kagwe et al., 2019), and workplace culture, with collegial support associated with lower turnover intention and bullying associated with higher turnover intention (Hazelton et al., 2011; Kagwe et al., 2019). In addition, the health service was undergoing disaggregation and structural changes (See Chapter 4.2) at the time which is likely to have also impacted nurses' turnover intention. This is consistent with findings from a meta-synthesis of studies on nurses' experiences working in organisations undergoing restructuring (Jensen & Sørensen, 2017), which showed that nurses experienced negative emotions and frustration, increased workload, and changes in collegial relationships.

9.2.3 Implications of Meta-inferences

In summary, the eight meta-inferences discussed in this section indicate that the PRiN program was effective in achieving its aims to promote nurses' resilience, mental health, and wellbeing due to its strong theoretical bases and effective facilitation and delivery of program content, with several components included in the program that have not been in other resilience interventions. For instance, coping self-efficacy is a key resilience-promoting factor that was directly targeted in the PRiN program (by providing nurses with effective coping skills and strategies) and measured in the pilot and the PRiN trial; however, few other resilience programs target coping self-efficacy (Kunzler et al., 2022). Similarly, PTG is important for MHNs because of their frequent exposure to traumatic incidents at work (Jacobowitz, 2013), and emotional intelligence is an important element of MHNs' practice (Sharrock, 2021). However, PRiN was the only reported resilience intervention for MHNs that successfully addressed and improved these outcomes. Additionally, by offering a peer-

based, face-to-face program to nurses, the organisation was able to demonstrate its commitment to supporting nurses' wellbeing and resilience and helped them feel valued and have a greater sense of belonging to the organisation.

However, the PRiN program is focused on strengthening individual wellbeing and resilience, not on addressing larger structural problems in the organisation. Of importance, the meta-inferences indicated that there were other organisational factors that influenced staff wellbeing, sense of belonging, and turnover intention. A multi-faceted organisational approach to these issues is needed. To address existing negative workplace culture, additional team-based and organisational approaches are needed to complement resilience programs and create a supportive work environment that is conducive to nurses' wellbeing, resilience, practice, and retention.

Further, comparison of meta-inference findings to those of other resilience interventions was limited due to the scarcity of research evidence on process evaluations of resilience interventions in the literature. This thesis emphasises the importance of conducting process evaluations to help explain trial outcomes and contributes to scaffolding knowledge on how to design and implement resilience interventions that are effective for MHNs and their practice.

In the following section, process evaluation findings (see Overall Summary of Process Evaluation Findings) are interpreted using the Normalisation Process Theory and discussed in the context of implementation research literature to address the second thesis aim and explore to what extent the PRiN program was implemented at the health service.

9.3. Thesis aim 2: Factors Influencing Implementation of the PRiN Program

Normalisation Process Theory is a sociological theory of the processes of implementing, integrating, and embedding innovations into a healthcare system. It explains the individual and collective actions (i.e., by a group of people) involved in these processes (May & Finch, 2009; May et al., 2018). As outlined in Chapter 3.4.3, the theory comprises 12 constructs: four related to the context (or environment) in which PRiN was implemented, four related to the collaborative work people undertook to implement PRiN, and four related to the outcomes of PRiN implementation (i.e., how PRiN changed nurses' wellbeing and practice and how the program was integrated into the health service).

As the theoretical framework for the thesis, Normalisation Process Theory (NPT) is used here to sensitise interpretation and discussion of the two main process evaluation findings (or overall conclusions) on program implementation to address the aim of evaluating the PRiN program implementation. Five of these 12 NPT constructs were relevant to and can be mapped against the two main process evaluation findings. This process has generated four important research implications of the factors that facilitate or act as barriers to the implementation of the PRiN resilience program for MHNs in a health service.

To recap, the first main process evaluation finding indicates that PRiN was implemented with strong fidelity, with 95% of program contents delivered as intended, and the program was highly effective in improving nurses' resilience, wellbeing, and clinical practice. This finding has two key implications, reflecting two NPT constructs, *coherence* and *adaptive execution*. The second main process evaluation finding relates to how nurses, managers, and health organisations can support the implementation and normalisation of PRiN to become an intervention for nurses' wellbeing and resilience. This finding has two

implications reflecting three NPT constructs, *cognitive participation*, *strategic intention*, and *negotiating capacity*. The implications are listed in Table 9.2 and discussed below.

Table 9.2: Mapping of Main Process Evaluation Findings to NPT

Main evaluation findings	Domain & NPT construct	Implications
1. PRiN was implemented with strong fidelity (95% full completion), providing nurses with resilience-promoting knowledge and practical strategies that had observable positive effects on their resilience and clinical practice, even in the face of significant disruptions of COVID-19.	• **Collaborative work – Coherence**: Understanding what factors may help nurses, managers, and the organisation make sense of, understand, and appreciate the purposes and values of PRiN can facilitate its implementation.	**Improving PRiN program acceptability**: The practicality and applicability of the PRiN program, as evidenced by objective and subjective improvements in nurses' wellbeing and practice, improve the program's acceptability and encourage participation.
	• **Context – Adaptive execution:** The easier and more flexibly PRiN can be implemented at a health service, the more readily it will be adopted and normalised.	**Adaptation of the implementation process**: PRiN implementation may require balancing minimal changes (to maintain program fidelity and positive effects on participant outcomes) with adaptations to program delivery (to facilitate implementation and promote normalisation within health services).
2. Nurses, managers, and the organisation accepted PRiN as an important addition to nurses' continuous professional development (CPD) and committed to supporting its wider implementation.	• **Context – Strategic intention**: the success of PRiN implementation is contingent on top-down support from individuals in higher leadership and managerial roles, who demonstrate a strategic intention to improve nurses' wellbeing and resilience. • **Collaborative work – Cognitive participation**: How nurses and managers	**Championing program implementation**: The success of PRiN implementation relies on top-down support from individuals in higher leadership and managerial roles who demonstrate a strategic intention to support nurses' wellbeing and resilience. It also relies on bottom-up support from local program leaders, who might be nurses, senior nurses, and managers, who strongly believe in the benefits of PRiN and can create a network of support to champion program implementation.

	(who have seen the benefits of the program and accepted it as an important addition to nurses' wellbeing repertoire) can engage others to create a network of support to drive the implementation of PRiN at health services.	
	• **Context – Negotiating capacity**: PRiN implementation and normalisation depend on how easily the program and its implementation can fit into the daily operations at health organisations.	**PRiN implementation as part of continuous professional development**: The program implementation can be facilitated by integrating it into existing professional development structures (e.g., staff training programs and workshops) at health services to minimise the resources required for implementation.

9.3.1 Improving PRiN Program Acceptability

The NPT construct of *coherence* suggests that to facilitate the implementation of the PRiN program, nurses, managers, and the organisation need to make sense of, understand, and appreciate the purpose and value of PRiN (May et al., 2018). The first main finding indicates that nurses and managers were able to observe improvements to nurses' practice and wellbeing following the program, because nurses could apply resilience-promoting knowledge and practical strategies from the program to maintain their resilience and wellbeing. Interpreting this finding using the NPT construct of coherence, the implication is that the practicality and applicability of the PRiN program, as evidenced by objective and subjective improvements in nurses' wellbeing and practice, enhanced the program's acceptability and encourage nurses, managers and the organisation to support its implementation.

Acceptability is a complex, multidimensional construct that reflects how individuals delivering or receiving an intervention perceive it to be appropriate, based on their expected or actual cognitive and emotional experiences with the intervention (Sekhon et al., 2017). The success of the PRiN program implementation is dependent on its acceptability to both program facilitators and program recipients (i.e., nurses and, to an extent, their managers) (Stok et al., 2016). Sekhon et al. (2017) posit that affective attitudes (how individuals feel about an intervention) and perceived effectiveness (the extent to which individuals believe an intervention effectively achieves its intended aims) influence an intervention's acceptability. The first main finding, which indicates that both nurses and managers were highly satisfied with the PRiN program and found it acceptable and had observed improvements in nurses' practice and resilience, lends support to this interpretation.

Further, the extent to which nurses understood the content and strategies from the PRiN program also contributes to its acceptability (Sekhon et al., 2017). Many nurses reported that they found the theoretical bases of PRiN (i.e., cognitive behavioural theory, interpersonal theory, and posttraumatic growth theory) and the face-to-face peer group format, consistent with the interpersonal nature of their practice. This included the importance of building and maintaining face-to-face interpersonal therapeutic relationships with consumers (Tolosa-Merlos et al., 2023) and delivering psychotherapeutic interventions to consumers (Lakeman et al., 2020). The direct applicability of the program theories for MHNs' interpersonal practice contributed to nurses' understanding of the program content, which improved knowledge uptake and program acceptability.

9.3.2 Adaptation of the Implementation Process

The NPT construct of *adaptive execution* suggests that the easier and more flexibly PRiN can be implemented at a health organisation, the more readily it will be adopted by individuals within the organisation and normalised to become an integral part of the organisation's support for nurses' wellbeing (May et al., 2022). The first main finding indicates that the program was delivered with strong fidelity (95% content completed as intended). Consequently, any changes to program content and delivery might impact the desirable effects of the program on nurses' wellbeing and resilience and are not advised. However, interpreting this finding using the NPT construct of adaptive execution suggests that PRiN implementation may require balancing minimal changes (to maintain program fidelity and positive effects on participant outcomes) with adaptations to program delivery (to facilitate implementation and promote normalisation within health services) to address some of the implementation barriers. For example, during the trial, challenges with organisational resources (such as heavy workloads and difficulty releasing staff to attend the program because of staff shortages) at the health service, exacerbated by COVID-19, were barriers to

PRiN implementation. Implementation of professional development activities (such as PRiN) were not necessarily a priority nor feasible due to these challenges. Therefore, a considerable amount of work by program facilitators and the research team was required to maintain the program delivery and program fidelity during this period of disruption. Implementation was also dependent on support from the health service Executive, Director of Nursing, and individual nurses and managers to successfully implement the program in the health service.

In the post-pandemic period, some of these barriers to implementation, such as workforce shortages leading to heavy workloads and difficulty with rostering staff to attend the program, are likely to persist (International Council of Nurses, 2022; Kurtzman et al., 2022). For future implementation, health organisations may need to adapt the implementation process to address these barriers. Balancing fidelity with adaptation has been considered one of the most difficult tasks in intervention implementation (Movsisyan et al., 2019). Therefore, health services need to collaborate with program developers to discuss necessary changes and modifications that do not impact the overall fidelity of the program and its positive outcomes for nurses. Further, program developers may consider incorporating participant feedback and comments into the program (e.g., adding more clinical scenarios) to improve its relevance and effectiveness to mental health nursing, which, as discussed above, could contribute to nurses' acceptance of, and support for, the program (May et al., 2016). Lastly, it may be helpful to monitor the effect of program modifications on the desirable participant outcomes to maintain the delicate balance between adaptation and effectiveness. This can be achieved through formal *outcome* evaluation (i.e., using validated measures) and formal *process* evaluation to investigate how the program is being implemented, received, and embedded at each health service.

9.3.3 Championing Program Implementation

The NPT construct of *strategic intention* suggests that the success of the PRiN implementation was contingent on support from the top down by individuals in higher leadership and managerial roles (e.g., executive leaders at health services) who demonstrate a strategic intention to improve nurses' wellbeing and resilience. The NPT construct of *cognitive participation* refers to the collaborative work from the bottom up by individuals (e.g., nurses, program facilitators, senior nurses, and managers) to engage others in creating a network of support to drive the implementation of PRiN at a health service. These individuals understand the benefits of the program and accept it as an important addition to nurses' wellbeing repertoire. Interpreting the second finding with these two constructs suggests that the success of PRiN implementation relied on top-down support from individuals in higher leadership and managerial roles (in this case the Executive team and the Director of Nursing) who demonstrated a strategic intention to support nurses' wellbeing and resilience. It also relied on bottom-up support from program facilitators, senior nurses, managers, and staff in the nursing workforce who strongly believed in the benefits of a resilience intervention like PRiN and created a network of support to champion the program implementation.

This implication is particularly relevant if the PRiN program is implemented at other health services. Like many interventions initially driven by a research team (Murray et al., 2010), the work and processes to operationalise the PRiN program implementation during the PRiN trial were driven by the research leader, in collaboration with the service leader (i.e., the Director of Nursing) and selected health service staff – the senior nurses (i.e., area health service senior nurses and program facilitators), and local team managers. The research leader drove the program implementation by drawing on findings from the pilot studies (Foster, Cuzzillo, et al., 2018; Foster, Shochet, Wurfl, et al., 2018) to demonstrate the program's effectiveness in improving nurses' wellbeing and by working collaboratively with the service

leader. The service leader supported the intervention for their workforce and drove the logistical aspects to help implement the intervention at the health service, including gaining senior executive approval at the health service and engaging with senior nurses and managers to secure their support for the trial and program implementation.

However, for future implementation of PRiN at other health services, the task of scaling up and embedding the program beyond the original trial falls to leaders, managers, and health service staff at other health services. To facilitate this process, it is crucial that service leaders (including the Executive) and managers recognise the value of PRiN, adopt it, and finance its implementation to realise the strategic intention of supporting nurses' wellbeing and resilience. These key stakeholders should be presented with evidence demonstrating that the PRiN program is an effective, evidence-based intervention with high acceptability and satisfaction among nurses. Emphasising how the program aligns with their intention to support staff wellbeing can encourage its adoption and implementation. Further, given that having champions is instrumental to intervention implementation in health care (Santos et al., 2022) it is recommended that program leaders (or champions) be designated to oversee PRiN program implementation at other health services. These program leaders may be internal key personnel at each organisation who have an intrinsic commitment and dedication to driving and operationalising the implementation of the PRiN program (Miech et al., 2018). In the context of mental health nursing, they may be in roles of clinical leadership or education, who are involved in facilitating the professional development of MHNs, such as service directors, managers, clinical educators, and senior nurses (Ennis et al., 2015). Additionally, it is recommended that health services draw on the support of staff who have had positive experiences with the program so that they can contribute to championing the program to their colleagues and improving its reach.

9.3.4 PRiN Implementation as part of Continuous Professional Development

The NPT construct of *negotiating capacity* suggests that PRiN implementation and normalisation depend on how seamlessly the program and its implementation integrate into the daily operations at health organisations (May et al., 2022; May et al., 2016). The second main process evaluation finding suggests that nurses, managers, and the organisation accepted PRiN as an important addition to nurses' continuous professional development (CPD). Applying the NPT construct to this finding suggests that program implementation can be facilitated by integrating it into existing professional development structures (e.g., staff training programs and workshops) at health services. This approach would minimise the associated resources and cost for implementation and reduce disruptions to service operations. Consequently, it could facilitate program implementation (May et al., 2016) and improve acceptability (Sekhon et al., 2017).

As an example, following the completion of the PRiN trial, under the grant conditions and within the timeline for the grant funding, the PRiN program continued to be delivered by the service's existing training and development unit. This was in response to ongoing interest from staff to participate in the PRiN program after the completion of the trial, and with the agreement by program facilitators to continue offering the program, first to nurses in the control group, and then to other nurses in the health service. The cost of program workbooks was covered by the grant funding during this period. The program was delivered by the same trained program facilitators from the trial, who were senior nurses with experience in delivering professional development training.

In addition, nurses and managers were willing to champion the program and invest time and resources in it because they saw the PRiN program as a legitimate part of nurses' continuing professional development (CPD). It should be noted that, while CPD is mandatory

in Australia and nurses can accumulate CPD points by participating in activities such as accredited coursework, conferences, workshops, and seminars (*Registration Standards*), the PRiN program was not formally recognised as a CPD in the organisation for CPD point accumulation during the trial. Nevertheless, many nurses still participated in the program because they wanted to develop their resilience and valued learning and professional development. In mental health nursing (Delgado et al., 2022; Foster et al., 2023) and in the wider fields of nursing (Mlambo et al., 2021), nurses view professional development as one of the key factors that helps shape and develop their professionalism. Situating the program within existing professional development trainings and workshops at each health service in future, where it is recognised for CPD point accumulation, may enhance nurses' endorsement of the program and encourage their participation.

9.4. Chapter Summary

This chapter addressed the aim of exploring factors that may help explain variation in participant outcomes between the intervention and control groups in the randomised controlled trial of the PRiN program. This was achieved by discussing the eight meta-inferences derived from integration of trial outcomes with process evaluation findings, in the context of evidence on resilience interventions in the mental health nursing and nursing literature. These meta-inferences indicate that the PRiN program was effective at achieving its aims due to its strong and relevant theoretical base, which translated into providing effective skills and strategies for this population (i.e. mental health nurses). These skills and strategies were practical and relevant for MHNs and useful to help them cope with challenges in the workplace and in life, to maintain their wellbeing and resilience, and to enhance their clinical practice. Program effectiveness was reflected through the significant improvements in seven out of eight participant outcomes for the intervention group as compared to the control group.

The discussion also addressed the second aim - to evaluate the PRiN program implementation - by applying the NPT framework to discuss the two overall conclusions from the process evaluation findings on program implementation. Using five relevant NPT constructs (i.e., strategic intentions, negotiating capacity, adaptive execution, coherence, and cognitive participation) to interpret these findings, it was determined that implementation of the PRiN intervention across settings and over time requires ongoing top-down support from leadership as well as bottom-up support from local leaders and champions (e.g., managers and senior nurses) to drive program implementation. The program can be situated within existing professional development structures to minimise the associated resources and costs and run as a CPD activity to encourage nurses to participate. Further modifications (e.g., to tailor program delivery to better fit logistical demands and challenges at health organisations or to incorporate participants' feedback to improve program acceptability) needs to involve the program developers and be balanced with minimising changes to maintain the fidelity and effectiveness of the program. The next chapter concludes the thesis by identifying implications and recommendations for practice, for future program implementation, for policy and education, and for future research.

Chapter 10: Conclusion and Recommendations

10.1. Introduction

This final chapter presents the thesis conclusions, and recommendations for policy, practice, program implementation and research. Recommendations can be used to guide future implementation of the PRiN program at other health services, to inform policy and practice, and to inform the direction of future research on resilience interventions. The chapter concludes with the strengths and limitations of the research that constitutes this thesis.

10.2. Conclusions Based on Thesis Findings

This thesis presents the first mixed methods process evaluation conducted alongside a partially clustered randomised controlled trial of the Promoting Resilience in Nurses (PRiN) program for MHNs. The research was conducted at a large Australian public mental health service. The thesis aims were to identify factors that may help explain variation in participant outcomes in the trial and to evaluate the PRiN program implementation. Based on the findings of the thesis, the main conclusions are:

- The PRiN program was successfully implemented in a public mental health service with strong program fidelity (95% of workshop units fully delivered as intended) and high levels of satisfaction from nurses (mean = 4.50/5) and managers (mean = 4.76/5). Factors that influenced successful implementation at the health service included: i) managers, nurses, facilitators, other senior staff, and Executives saw the value of the program in improving nurses' resilience, wellbeing, and willingness to stay in the health workforce; and ii) to supported program implementation by allocating human and practical resources to facilitate and deliver the program.

- In addition, nurses and managers perceived the PRiN program with its focus on wellbeing, as a valuable part of nurses' continuous professional development (CPD) and able to be integrated into CPD programs. They subsequently encouraged their colleagues and staff to participate in the program and provided recommendations to refine and improve the program's content (e.g., more in-depth discussion on program theories) and delivery (e.g., refresher courses).
- Program nurses experienced significant disruptions to their clinical practice and wellbeing due to the COVID-19 pandemic. However, by drawing on knowledge and skills gained from the PRiN program and through professional commitment, they reported being able to maintain their resilience in practice and grow through the challenges of COVID-19.

10.3. Implications Arising from Findings

Findings in this thesis have important implications for individual mental health nurses and health services, and for maintaining a sustainable and stable mental health nursing workforce. The findings contribute to existing evidence that shows that MHNs often experience highly stressful (if not traumatic) workplace experiences such as dealing with antisocial and physical aggressive behaviours, and consumer suicide. If these stressors are not appropriately addressed by health services, nurses' wellbeing can be negatively impacted upon, and their capacity to provide therapeutic interpersonal care to consumers. For instance, some nurses in this research reported feeling overwhelmingly anxious when working in a high acuity environment (e.g., intensive care area) or when serious incidents had occurred in the ward (including a consumer death by suicide). In addition, they also reported that a negative work culture and a perceived lack of support from the health service influenced decisions to leave the current organisation.

Additionally, there was new knowledge on how MHNs could successfully manage the distress associated with significant organisational changes (e.g., health service restructuring and unprecedented demands from a global pandemic). This included using the knowledge and coping skills from PRiN (e.g., challenging negative self-talk and cognitive reframing) to manage their own distress and maintain their wellbeing when faced with these challenges. Improving resilience helped nurses manage stress levels, resulting in being able to uphold high quality care delivery to the consumers. To support MHNs, organisations could consider providing the PRiN program in combination with other practical wellbeing-promoting resources (e.g., flexible work arrangements and psychological support).

While the PRiN program was shown to be effective in this public mental health setting and with this population of mental health nurses, further research is required to explore how the effectiveness of PRiN can be sustained when it is translated to other health services and settings, and with a wider group of nurses. Informed by Normalisation Process Theory, novel insights were generated to give a deeper understanding of the individual and collective work by nurses, managers, and the health services to implement the PRiN program, and the contextual barriers and facilitators that influenced program implementation. For instance, the success of implementation was contingent upon support from the top down (e.g., from health service leaders) and from the bottom up (i.e., local champions and nurses). Support for the program also depended on perceptions of the value, practicality, and applicability by nurses, managers, and the health services. To facilitate program implementation while minimising the organisational resources required to deliver the program, PRiN can be integrated within existing professional development infrastructure.

10.4. Recommendations

Based on the implications of the thesis findings, the following recommendations are suggested for future implementation of the PRiN program, for nurses' wellbeing, for policy, and for future research.

10.4.1 Recommendations for Future PRiN Program Implementation

It is recommended that for future implementation of the program, health services:

- Locate program delivery in the local health service training and development unit, as part of nurses' continuous professional development (CPD). For example, managers can encourage nurses to participate in the program, and organise staff release from roster to attend the program as they would for other CPD activities. Additionally, sequential release of staff to attend the program may ease rostering pressure for unit/team managers.
- Make explicit the purposes and values of PRiN for nurses, managers, and health organisations. For instance, nurses, managers, and organisations should be provided with detailed information about PRiN (e.g., by program developers or program leaders/champions) that highlights its value and relevance
- Based on the findings that barriers to staff participation in the program included heavy workloads, health services should consider providing protected CPD time and staffing backfill to enable nurses to attend PRiN.
- Identify executive-level support (e.g., Director of Nursing) and local program leaders (e.g., clinical leaders such as senior area mental health nurses or senior educators) to mobilise finance and resources for implementation of PRiN and to collaborate with program developers to implement the program. Program leaders

are needed to oversee program implementation and delivery, organise training of program facilitators and encourage and enable staff participation.

- For a health service that has multiple areas or units within it, the program could be offered at each individual unit/area so that participating nurses can build a stronger connection with their unit/area work colleagues and increase their sense of workplace belonging.
- Given the importance of adherence to program fidelity in achieving the desirable outcomes, ongoing evaluation of PRiN implementation at health services, such as measuring program uptake and self-evaluations of satisfaction and acceptability to participants should be considered.
- Provide PRiN for all nurses from graduate and junior nurses (including registered and enrolled nurses in transition programs into mental health nursing) to senior nurses and managers.
- Offer ongoing short workshops (e.g., reflective practice sessions and resilience-based clinical supervision) or refresher courses (within three to six months after the last program) to consolidate the knowledge and skills acquired from PRiN.

Based on suggestions from nurses and managers who participated in the process evaluation, to help improve the program's relevance and nurses' acceptance of the program, it is recommended that the program developers (and the health service as relevant) consider:

- Using clinically relevant examples and scenarios specific to mental health nursing such as conflict in the workplace.
- Including more in-depth discussions about the theoretical aspects of resilience and resilience factors to further enhance nurses' understanding of how to build and maintain their resilience.

- Including activities such as brainstorm team-building activities and strategies that can be applied in the workplace to strengthen relationships with colleagues, particularly in the context of team conflict.
- Inviting guest speakers who have previously participated in the program, to share their experiences of PRiN.
- Adapting the program for other mental health professionals, such as occupational therapists or social workers who work with mental health consumers.

10.4.2 Implications for Nurses' Wellbeing

It is the responsibility of health services to provide a safe working environment and ensure that nurses have adequate resources to maintain their wellbeing and resilience, and to support high quality care to the consumers. Thus, it is recommended that health services:

- Provide resources and support for nurses to attend to personal and professional self-care. Professional self-care may include clinical supervision and reflective practice, mentoring and coaching, and CPD. Additionally, health services should implement arrangements that support work-life balance, such as flexible working hours and work-from-home arrangements, where appropriate (e.g., for community teams).

- Encourage MHNs to use psychological support services (e.g., employee assistance program, peer support, or debrief) following critical incidents at work (such as consumer suicide).

- Create a positive workplace culture and foster collegial connections and relationships. This could include teaching interventions to improve nurses' interpersonal communication skills and how to address workplace conflict.

- Provide financial subsidy (e.g., conference registration) for staff to attend CPD activities, and invest in the implementation of resilience interventions or programs (such as the PRiN program) that have been proven effective in order to help nurses build and maintain workplace resilience (and subsequently their wellbeing and intention to stay). These interventions should be offered as part of staff induction or paid training to encourage participation.

- Initiate a community of practice of resilience where nurses can share their experiences with maintaining resilience at work and at home. This community of practice could be part of a professional body of mental health nursing, such as the Australian College of Mental Health Nursing, where regular educational events (e.g., special interest group to teach nurses resilience skills) and group discussions (either in person or online) can be facilitated.

Nurses are encouraged to implement strategies to take care of their own wellbeing and resilience. Recommendations for consideration include:

- Use employee assistance programs when needed.
- Engage in activities that promote self-care and work-life balance, such as taking regular annual leave and building personal support networks in and outside of the workplace.
- Utilise available professional development opportunities to help improve clinical practice (e.g., reflective practice) and to prepare for clinically challenging situations (such as working with consumers who are acutely unwell). Professional development opportunities may include higher university training (e.g., postgraduate diploma), conference attendance, and

courses from professional mental health nursing organisations and bodies (such as the Australian College of Mental Health Nursing).

10.4.3 Implications for Policy and Education

It is recommended that policy makers (e.g., the Victorian Department of Health and Victoria's Chief Mental Health Nurse):

- Invest in research, development, and implementation of resilience interventions designed to support nurses' wellbeing. This includes funding for the implementation of the PRiN program at state and national level so that this evidence-based and effective intervention can reach and benefit as many nurses as possible, thus increasing the likelihood of retaining staff and promoting a healthy workforce.

10.4.4 Recommendations for Future Research

Building on the findings in the thesis around the resilience intervention and the process to implement the intervention into a health setting, it is recommended that future research includes:

- Resilience interventions for MHNs with relevant theoretical bases and delivered face-to-face in group settings (which also helps to foster a sense of connection and belonging among nurses) to implement resilience interventions that have high acceptability, are effective, and are relevant to MHNs' practice. The theoretical bases of these resilience interventions should include posttraumatic growth, sense of belonging, and emotional intelligence (including emotional regulation) components, and that these outcomes should be measured using appropriate instruments (e.g., the Posttraumatic Growth

Inventory). The interventions should also address nurses' emotional, psychological, and social wellbeing, and psychological distress, which help to address the mental health nursing workforce shortage.

- An investigation and comparison of the effectiveness of face-to-face versus web-based resilience interventions for MHNs.
- A longitudinal study to investigate the longer-term effects (i.e., > 6 months post-intervention) of the program on participating nurses' resilience, wellbeing, professional quality of life, practice, and retention. This will help inform the implementation of refresher courses (i.e., reinforcement) to sustain the program's effectiveness.
- An outcome (pre-post) evaluation and a process evaluation to assess the normalisation and embedding of the program at other health services (i.e., how the program becomes part of nurses' wellbeing repertoire) and their impacts on the expected participant outcomes (e.g., whether the improved coping self-efficacy is still observed in future implementations at other settings).
- An economic evaluation to investigate the cost-effectiveness (e.g., to obtain the license from the program developers to implement the program) and economic outcomes (e.g., financial benefits from maintaining a healthy and sustainable mental health nursing workforce) of the PRiN program implementation, from a narrow (e.g., health service) to a broad (e.g., the mental health nursing workforce) perspective.

10.5. Strengths and Limitations of the Research

This research is novel because it was the first mixed methods process evaluation of a randomised controlled trial of resilience interventions for mental health nurses, both in Australia and internationally. Findings have contributed new knowledge on the current state

of resilience research in mental health nursing, and the challenges associated with MHNs' work and personal life during COVID-19, including how those challenges had impacted their practice and wellbeing and the factors that are important to consider when implementing PRiN at other health services. The process evaluation was designed alongside the outcome evaluation (i.e., the randomised controlled trial). This design allowed addressing the first thesis aim, to identify factors that may help explain variation in participant outcomes (i.e., between the intervention and control arms) in the trial, by integrating complementary qualitative and quantitative process evaluation findings with outcome findings (i.e., trial findings) to generate a more comprehensive understanding of the PRiN program implementation processes at the health service. Further, to address the second thesis aim to evaluate PRiN program implementation, a robust theory of implementation (i.e., Normalisation Process Theory) was used to deepen understanding of the factors that influenced implementation. Additionally, evaluating the effectiveness of a resilience program's implementation during a challenging period (i.e., COVID-19) provided valuable insights into how the program exerted positive effects on participants under trying circumstances. This also demonstrates the program's high effectiveness in strengthening nurses' resilience. Lastly, data collection for the process evaluation was conducted shortly after the program, thus minimising the risk of recall bias.

There are some limitations to note. Because the study was conducted with nurses who had completed a resilience program while working at a mental health service in Australia during COVID-19 in one Australian state, the findings may not be generalisable across some settings (e.g., health services in other countries) post-pandemic. Additionally, people who participated in the study were already keen to be involved with resilience interventions and thus might have provided more favourable views and experiences on participating in a resilience intervention. However, a range of views (both positive and negative) about the

program were obtained. Additionally, the disaggregation of the health service (see Chapter 4.2) as part of the Mental Health reform recommended by the Royal Commission into Victoria's Mental Health System (State of Victoria, 2021) where the research was conducted may potentially impact nurses' outcomes, including their sense of workplace belonging and turnover intentions, as well as their experiences with the PRiN program.

10.6. Conclusion

This thesis has presented a mixed methods process evaluation of a randomised controlled trial of the PRiN resilience intervention for mental health nurses, and contributed to new knowledge on factors that helped explain variation in participant outcomes between the intervention and control groups and how the PRiN program may be optimally implemented in different settings. The implications of these findings are that it is a highly effective intervention that can help address the negative impacts of workplace stressors and challenges on MHNs' wellbeing, resilience, and therefore may impact favourably on workforce sustainability. This is particularly relevant in the current context of the ever-increasing complexity of mental health-related presentations and the long-lasting physical and mental impacts of COVID-19 on the general population. The responsibility to address the urgent need to maintain a healthy and sustainable mental health nursing workforce rests with both the individual nurses and the health organisations. Health organisations and services have a responsibility to provide nurses with adequate resources and support, such as implementing effective resilience interventions for MHNs (like the PRiN program) across health services to reach a larger number of MHNs. Individual nurses are encouraged to equip themselves with and use both personal resources (e.g., coping strategies) and external support (e.g., peer support) to help maintain their wellbeing and resilience in practice. The implementation of the PRiN program at health services requires commitment, support and resources from mental health nursing leaders and health organisations, as well as local

managers, senior nurses, and the nursing staff. Health services could consider appointing program leaders to drive the implementation, incorporate the program into nurses' continuous professional development, and advertise the program widely to encourage nurses to sign up. The culmination of findings and recommendations in this thesis play a part in advancing the mental health nursing profession for the betterment of mental health nurses and their consumers

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Appendices

Appendix 1: Thesis Publication Authorship Statements of Contribution

Publication 1 (Chapter 2.2)

Bui, M. V., McInnes, E., Ennis, G., & Foster, K. (2023). Resilience and mental health nursing: An integrative review of updated evidence. *International Journal of Mental Health Nursing, 32*(4), 1055–1071. https://doi.org/10.1111/inm.13132

Publication 1 Author Statement of Contribution

Authors		**Percentage of contribution**	**Signature**
Author 1	Minh Viet Bui	60%	[redacted]
Author 2	Professor Kim Foster	25%	
Author 3	Professor Elizabeth McInnes	10%	
Author 4	Dr Gary Ennis	5%	

Publication 2 (Chapter 3.3)

Bui, M. V., McInnes, E., Ennis, G., & Foster, K. (2022). Protocol for a mixed methods process evaluation of the Promoting Resilience in Nurses (PRiN) trial. *International Journal of Mental Health Nursing, 31*(3), 687–696. https://doi.org/10.1111/inm.12989

Publication 2 Author Statement of Contribution

Authors		**Percentage of contribution**	**Signature**
Author 1	Minh Viet Bui	60%	[redacted]
Author 2	Professor Kim Foster	25%	
Author 3	Professor Elizabeth McInnes	10%	
Author 4	Dr Gary Ennis	5%	

Publication 3 (Chapter 7.2)

Bui, M. V., McInnes, E., Ennis, G., & Foster, K. (2023). Mental health nurses' experience of resilience during COVID-19: A qualitative inquiry. International Journal of Mental Health Nursing. https://doi.org/10.1111/inm.13213

Publication 3 Author Statement of Contribution

Authors		**Percentage of contribution**	**Signature**
Author 1	Minh Viet Bui	60%	[redacted]
Author 2	Professor Kim Foster	25%	
Author 3	Professor Elizabeth McInnes	10%	
Author 4	Dr Gary Ennis	5%	

Appendix 2: Thesis Publication Journal Permissions

As an author of the published Wiley articles, the PhD candidate has the right to reuse the articles as part of the thesis, and no permission from Wiley is needed for this purpose.

The Wiley Network. (2020, November 16). *How to Clear Permissions for a Thesis or Dissertation*. https://www.wiley.com/en-us/network/publishing/research-publishing/trending-stories/how-to-clear-permissions-for-a-thesis-or-dissertation.

Appendix 3: Conference Proceedings

Bui, M. V. (Presenter), Foster, K., McInnes, E., & Ennis, G. (August 2022). Mental health nurses' experience of resilience during COVID-19: A qualitative inquiry. 23rd Victorian Collaborative Mental Health Nursing Conference *"Thriving through change"*. Melbourne, Victoria.

Bui, M. V. (Presenter), Foster, K., McInnes, E., & Ennis, G. (August 2023). Mental health nurses' experience of resilience during COVID-19: A qualitative inquiry. 24th Victorian Collaborative Mental Health Nursing Conference *"Inspiring mental health nursing... leading from where we are"*. Melbourne, Victoria.

Bui, M. V. (Poster Presenter), Foster, K., McInnes, E., & Ennis, G. (September 2023). Mental health nurses' experience of resilience during COVID-19: A qualitative inquiry. Australian College of Mental Health Nurses (ACMHN) 47th International Mental Health Nursing Conference *"Mental health nursing: Unleash the potential"*. Melbourne, Victoria.

Appendix 4: Human Research Ethics Committee Approval

MELBOURNE HEALTH

Office for Research
The Royal Melbourne Hospital
Level 2 South West
300 Grattan Street
Parkville VIC 3050
Australia

Telephone: +61 3 9342 8530
Facsimile: +61 3 9342 8548
Email: research@mh.org.au
thermh.org.au
ABN 73 802 706 972

MELBOURNE HEALTH HUMAN RESEARCH ETHICS COMMITTEE
ETHICAL APPROVAL

Professor Kim Foster
NorthWestern Mental Health
The Royal Melbourne Hospital
Parkville, VIC, 3050

01 April 2020

Dear Professor Kim Foster,

HREC Reference Number: HREC/56912/MH-2020

Melbourne Health Site Reference Number: 2019.276

Project Title: Promoting Resilience in Nurses: a randomized controlled trial

---

I am pleased to advise that the above project has **received ethical approval** from the Melbourne Health Human Research Ethics Committee (HREC). The HREC confirms that your proposal meets the requirements of the National Statement on Ethical Conduct in Human Research (2007). This HREC is organised and operates in accordance with the National Health and Medical Research Council's (NHRMC) National Statement on Ethical Conduct in Human Research (2007), and all subsequent updates, and in accordance with the Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95), the Health Privacy Principles described in the Health Records Act 2001 (Vic) and Section 95A of the Privacy Act 1988 (and subsequent Guidelines).

HREC Approval Date: 26 March 2020

Ethical approval for this project applies at the following sites:

Site
Melbourne Health

Approved Documents:

The following documents have been reviewed and approved:

Document	Version	Date
Protocol	2	20 February 2020
Master Part 1 Nurses Participant Information Sheet/Consent Form	1	20 January 2020
Master Part 2 Program Satisfaction Interview Participant Information Sheet/Consent Form	1	20 January 2020

First in Care, Research and Learning

The Royal Melbourne Hospital NorthWestern Mental Health Doherty Institute

T1 Survey & Eligibility, Registration (Part 1)	1	20 January 2020
T2 Survey (Part 1)	1	20 January 2020
T3 Survey (Part 1)	1	20 January 2020
Program Fidelity Checklist (Part 2)	1	20 January 2020
Satisfaction Survey Program Participants (Part 2)	1	20 January 2020
Barriers and Facilitators Survey For Managers (Part 2)	1	20 January 2020
Semi-Structured Interview Guide - Program Participants (Part 2)	1	20 January 2020
Study Flyer (Part 1)	2	20 February 2020
Recruitment Email Invite From Managers To Nurses (Part 1)	1	20 January 2020
Email To Program Facilitators (Part 2)	1	20 January 2020
Email To Managers For Survey (Part 2)	1	20 January 2020

Governance Authorisation:

Governance Authorisation is required at each site participating in the study before the research project can commence at that site.

You are required to provide a copy of this HREC approval letter to the principal investigator for each site covered by this ethics approval for inclusion in the site specific assessment application.

Conditions of Ethics Approval:

- You are required to submit to the HREC:
    - An Annual Progress Report (that covers all sites listed on approval) for the duration of the project. This report is due on the anniversary of HREC approval. Continuation of ethics approval is contingent on submission of an annual report, due within one month of the approval anniversary. Failure to comply with this requirement may result in suspension of the project by the HREC.
    - A comprehensive Final Report upon completion of the project.
- Submit to the reviewing HREC for approval any proposed amendments to the project including any proposed changes to the Protocol, Participant Information and Consent Form/s and the Investigator Brochure.
- Notify the reviewing HREC of any adverse events that have a material impact on the conduct of the research in accordance with the NHMRC's Safety Monitoring and Reporting in Clinical Trials Involving Therapeutic Goods (2016) guideline.
- Notify the reviewing HREC of your inability to continue as Coordinating Principal Investigator.
- Notify the reviewing HREC of the failure to commence the study within 12 months of the HREC approval date or if a decision is taken to end the study at any of the sites prior to the expected date of completion.
- Notify the reviewing HREC of any matters which may impact the conduct of the project.
- If your project involves radiation, you are legally obliged to conduct your research in accordance with the Australian Radiation Protection and Nuclear Safety Agency Code of Practice 'Exposure of Humans to Ionizing Radiation for Research Purposes' Radiation Protection series Publication No.8 (May 2005)(ARPANSA Code).

Appendix 5: Data Collection Procedure

Materials:

- Part 2 Participant Information Sheets (1 for each participant)
- Participant list with participant linking numbers
- Satisfaction surveys – ensure these are pre-coded with participant linking number
- Envelope for satisfactions surveys

Before the day:

- Book vehicle for entire afternoon in advance
- Block out time in calendar once program dates have been determined
- Confirm approximate end time with facilitators and fill out times below

Process:

- Upon arrival request fidelity confirm that fidelity checklist is completed and ask facilitators to leave room [1 min]
- Approach each participant, identify them and hand them their survey along with the Part 2 PIS [2 mins]
- Project staff to (re)introduce themselves, thank participants for enrolling and thank facilitators [1 min]
- Remind participants of ongoing requirements for Part 1. An email with the second survey will be arriving the following day and that a third survey will follow in three months' time [2 min]
- Briefly describe Part 2 and PIS including satisfaction survey and invitation to be interviewed; ensure participants are aware that the satisfaction survey is NOT the time 2 survey [3 mins]
- Provide participants with time to complete the satisfaction survey and interview form [10 mins]
- Collect satisfactions surveys in envelope [1 min]
- Collect attendance sheet and fidelity checklist from facilitators [3 mins]

Notes:

- Check the fidelity checklist has sufficient detail and ask facilitators to add extra detail if not
- Engage with facilitators and add additional details to the checklist afterward

Appendix 6: Participant Information Sheet and Consent Form (Satisfaction Survey and Semi-structured Interview)

NorthWestern Mental Health

ACU AUSTRALIAN CATHOLIC UNIVERSITY

ATTACHMENT M: PIS PROGRAM PARTICIPANT SATISFACTION & FOLLOW-UP INTERVIEW (PART 2) Participant Information Sheet

NorthWestern Mental Health

Title	Promoting Resilience in Nurses: a randomized controlled trial
Short Title	Promoting Resilience in Nurses
Project Sponsor	Australian Catholic University
Coordinating Principal Investigator/ Principal Investigator	Professor Kim Foster
Associate Investigator(s)	Professor Ian Shochet, Professor Jane Shakespeare-Finch, Professor Darryl Maybery, Associate Professor Michael Roche, Deborah Osborne, James Metcalfe & Minh Viet Bui
Location	NorthWestern Mental Health/Melbourne Health

Part 1 What does my participation involve?

1 Introduction

You are invited to take part in this research project; "Promoting Resilience in Nurses: a randomised controlled trial". You are invited because you received the PRiN resilience education program at NorthWestern Mental Health.

This Participant Information Sheet tells you about the project. It explains the processes involved with taking part. You can keep this Participant Information Letter. Knowing what is involved will help you decide if you want to take part in the research. Please read this information carefully. Ask questions about anything that you don't understand or want to know more about. Participation in this research is voluntary. If you don't wish to take part, you don't have to.

If you decide you want to take part in the project, you will be asked to complete a brief program satisfaction survey. Completing the survey implies your consent. At the end of the survey, you will also be invited to consent to being contacted for a short follow-up telephone interview about your experiences of the PRiN program.

By consenting you are telling us that you:
- Understand what you have read
- Consent to take part in the research project
- Consent to be involved in the research described

2 What is the purpose of this research?

The aim of this project is to identify participant perspectives on, and satisfaction with, the Promoting Resilience in Nurses (PRiN) resilience education program. This project builds on a

pilot study conducted in 2017-18 at NWMH, and is the first of its kind in the world. The findings will build new knowledge on the impacts of resilience programs for nurses.

This research has been funded by the Australian Research Council and industry partners and is sponsored by Australian Catholic University. The project involves researchers working in collaboration: Australian Catholic University, Queensland University of Technology, Monash University, University of Technology Sydney, and industry partners: Australian Nursing and Midwifery Federation, NorthWestern Mental Health, Department of Health and Human Services (Victorian Government), and Health and Community Services Union.

This research has been initiated by the lead researcher, Professor Kim Foster. Some of the results of this research will be used by a student researcher to obtain a Masters Research degree.

3 What does participation in this research involve?

Participation in this project will involve;

- Completing a brief (~10 minute) satisfaction survey about the PRiN program after the 2nd day of the program at the venue the program is held in.
- A short one-off audio recorded telephone interview (~20 minutes) following the 2nd day of the program. The interview will be held at a time/date that is suitable to you.

There are no costs associated with participating in this research project, nor will you be paid.

4 Other relevant information about the research project

This research project is a sub-study of a larger trial of the PRiN Resilience Program at NWMH. It is anticipated that about 180 nurses across NWMH who have participated in the PRiN Program will participate in this project.

5 Do I have to take part in this research project?

Participation in this research project is voluntary. If you do not wish to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage. Your decision whether to take part or not to take part, or to take part and then withdraw, will not affect your relationship with Melbourne Health and NWMH.

6 What are the possible benefits of taking part?

We cannot guarantee or promise that you will receive any benefits from this research; however, the findings of this research will lead to greater understanding of how the PRiN resilience program is perceived by nurses.

7 What are the possible risks and disadvantages of taking part?

We do not anticipate you will be distressed by participating in the satisfaction survey or interview. If you do not wish to answer a question, you may skip it and go to the next question, or you may stop immediately.

If you do become upset or distressed as a result of your participation in the survey or interview and wish to access support, Melbourne Health and NorthWestern Mental Health provide the Employee Assistance Program (EAP) that you are able to access via the intranet in confidence and free of charge.

8 What if I withdraw from this research project?

If you do consent to participate, you may withdraw at any time by not completing the survey, or not participating in the interview. If you do withdraw from the interview, you will be asked to complete and sign a 'Withdrawal of Consent' form; this will be provided to you by the researcher. If you decide to withdraw, the researchers will not collect additional survey or interview data from you. You should be aware that data collected up to the time you withdraw will form part of the research project results. If you do not want your data to be included, please tell the researchers when you withdraw from the research project.

9 Could this research project be stopped unexpectedly?
It is unlikely but possible this research project may be stopped unexpectedly for some reason. These may include the PRiN program was poorly attended or funding for the project was ceased.

10 What happens when the research project ends?
A summary report of the project findings (aggregate findings) will be sent to the participating areas and teams at NWMH. If you are interested in obtaining a summary report of the results yourself please let one of the researchers know and give them your contact details.

Part 2 How is the research project being conducted?

11 What will happen to information about me?
By consenting to this research project you consent to the research team collecting and using information provided by you. Information collected from you in this research will non-identifiable. All hard copy information will be kept in a locked filing cabinet, in the locked office at Melbourne Health of the lead investigator, Professor Kim Foster. Electronic data will be stored on a secure password protected computer and backed up on a secure network drive. Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law. All data will be held securely for five years and then destroyed. Non-identifiable data of the study may be held in a secure cloud data storage repository at Australian Catholic University.

It is anticipated that the results of this research project will be published and/or presented in a variety of forums. In any publication and/or presentation, information will be provided in such a way that you cannot be identified. All data will be non-identifiable and aggregated.

12 Complaints and compensation
If you are unhappy with outcomes of participating in this research you should contact the Melbourne Health Office for Research (See Part 15). Alternatively you may contact the Office of the Australian Information Commissioner.

13 Who is organising and funding the research?
This research project is being conducted by Professor Kim Foster and the researchers listed at the beginning of this form, and is funded by the Australian Research Council and our partners the Australian Nursing and Midwifery Federation, Department of Health and Human Services Victoria, and Health and Community Services Union. No member of the research team will receive a personal financial benefit from your involvement in this research project (other than their ordinary wages).

14 Who has reviewed the research project?
All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this research project have been approved by the HREC of Melbourne Health.

This project will be carried out according to the *National Statement on Ethical Conduct in Human* Research (2007). This statement has been developed to protect the interests of people who agree to participate in human research studies.

15 Further information and who to contact
The person you may need to contact will depend on the nature of your query. If you want any further information concerning this project or if you have any problems which may be related to your involvement in the project, you can contact Minh Viet Bui on 03 9342 8526.

Research contact person

Name	Minh Viet Bui
Position	Research Assistant
Telephone	03 9342 8526 (ext. 28526)
Email	Minhviet.bui@mh.org.au; minh.bui@myacu.edu.au

For matters relating to research at the site at which you are participating, the details of the local site complaints person are:

Complaints contact person

Name	Director Research Governance and Ethics
Position	Complaints Manager
Telephone	(03) 9342 8530
Email	Research@mh.org.au

If you have any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general, then you may contact:

Reviewing HREC approving this research and HREC Executive Officer details

Reviewing HREC name	Melbourne Health
HREC Executive Officer	HREC Manager
Telephone	03 9342 8530
Email	Research@mh.org.au

Appendix 7: Participant Satisfaction Survey

CODE [INTERNAL USE ONLY]

Promoting Resilience in Nurses (PRiN) Participant Satisfaction Survey

PARTICIPANT INFORMATION

You are invited to take part in this survey because you have attended the PRiN resilience program. Your responses will not affect your treatment or the treatment of consumers you care for, or your future prospects at NWMH.

Completing this survey implies informed consent for your data to be used by the research team to identify participant satisfaction with the program.

Please circle the number that best describes how you felt about the program.

1. How valuable has the program been in assisting you to develop an overall sense of well-being?

No value		Some value		Great value
1	2	3	4	5

2. How valuable has the program been in developing your understanding of resilience?

No value		Some value		Great value
1	2	3	4	5

3. Do you feel more confident in drawing on your strengths following challenging situations?

Not at all		Somewhat		A great deal
1	2	3	4	5

4. How valuable has the program been for improving your communication skills?

No value		Some value		Great value
1	2	3	4	5

5. Do you feel the program has contributed to you having a positive outlook for your future as an employee here?

Not at all		Somewhat		A great deal
1	2	3	4	5

6. Do you feel the program has contributed to you having a positive outlook for your personal life?

Not at all		Somewhat		A great deal
1	2	3	4	5

7. Overall, how would you rate the usefulness of the PRiN program?

Not at all		Somewhat		A great deal
1	2	3	4	5

8. Overall, how enjoyable was the PRiN program?

Not at all		Somewhat		A great deal
1	2	3	4	5

These questions are designed to understand how you have used the skills learnt during the program.

9. How valuable has the program been in assisting you to gain a greater understanding of your strengths?

No value		Some value		Great value
1	2	3	4	5

10. How useful has the program been for you in understanding and managing your stress?

No use		Some use		Great use
1	2	3	4	5

11. Do you feel that the program has or will assist you to deal with any stress you may experience in the future?

Not at all		Somewhat		A great deal
1	2	3	4	5

12. Do you feel that the program was valuable in assisting you to increase your use of positive self-talk?

Not at all		Somewhat		A great deal
1	2	3	4	5

13. Do you feel that the program assisted you to recognise and challenge your negative self-talk?

Not at all		Somewhat		A great deal
1	2	3	4	5

14. How valuable has the program been in helping you to utilise a more proactive problem-solving approach?

Not at all		Somewhat		A great deal
1	2	3	4	5

15. Have the skills you have learnt throughout the program been beneficial for your relationships at work?

Not at all		Somewhat		A great deal
1	2	3	4	5

16. What benefits do you feel you have gained from taking part in the PRiN Program?

17. What was the most valuable skill you learnt from the program?

18. What ideas do you have for improving the program?

Thank you for your involvement in the PRiN Program and for your valuable feedback.

Please see the following page for how you can provide additional feedback and help us further.

****This information will be kept separate to your survey****

Invitation to Follow-up Interview

Please indicate if you are willing to participate in a one-off 20 minute telephone interview to discuss your experience of participating in the PRiN program.

YES, INTERESTED ☐

NO THANKS ☐

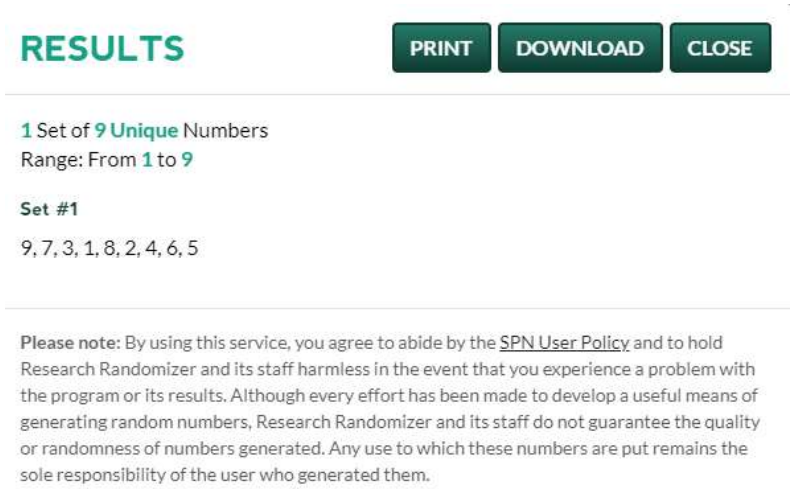
If you responded 'YES', please provide the best contact details for us to contact you.

Name:_____

Email: _____

Phone: _____

Appendix 8: Participant Semi-structured Interview Protocol

Randomisation procedure	If, for each of the seven PRiN programs that were delivered, the number of participants consented to be interviewed was less than or equal to 3, all participants will be contacted for interview. If, for each of the seven PRiN programs that were delivered, the number of participants consented to be interviewed was more than 3, participants would be randomised. For example, in Program 4, seven participants consented to be contacted for the interview, and randomisation was required). Randomisation procedure: - Randomiser: https://www.randomizer.org/ - A random string of numbers was generated using the following setting: 1 set, [total amount of consented participants] numbers per set, number range from 1 to [total amount of consented participants], each number in a set to remain unique, no sorting.  - The string of number (e.g., 9, 7, 3, 1, 8, 2, 4, 6, 5) was then pasted onto the list of consented participants for each program, so that each participant was assigned a number from this string.

	PROGRAM # REDCap ID | AREA | TEAM | MANAGER | FIRST | SURNAME | Part 2 ID | Interview | Randomised number 6 | x | x | x | x | x | 9 | | 9 9 | x | x | x | x | x | 10 | | 7 11 | x | x | x | x | x | 11 | N/A | N/A 12 | x | x | x | x | x | 12 | 3 | 3 15 | x | x | x | x | x | 13 | 1 | 1 20 | x | x | x | x | x | 14 | | 8 22 | x | x | x | x | x | 15 | 2 | 2 25 | x | x | x | x | x | 16 | | 4 26 | x | x | x | x | x | 17 | | 6 30 | x | x | x | x | x | 18 | | 5 - Participants with number 1, 2 and 3 were selected to be contacted for interview. - If any of these participants declined to be interviewed, then the next participants (e.g., participant with number 4 or 5) would be contacted to replace them.
Contacting Participant to Schedule Time	- Confirm participant's consent form. - Contact participant to organise interview time. - Participant to be informed that the interview will be about their experiences and views on the program (and how they had applied what they learnt in the program in their life and work), will go for **30 minutes**, will be audio-recorded and is confidential. **Participant recommended to be in a private space to avoid interruption and be able to speak freely.** - Send a confirmation email with date and time. - Make calendar reminder and paper calendar entry.
Email Template	Hi [NAME], Thank you for your time on the phone earlier [TIME PERIOD e.g, this morning/this afternoon etc.] and for agreeing to be contacted for a follow-up interview regarding the Promoting Resilience in Nurses program that you attended in [MONTH]. **I'm writing to confirm that you are booked in for a ~30 minute interview on [DATE] at [TIME].** Please put this into your calendar and let me know ASAP if there are any issues. I will call you on the number you provided and conduct the interview via phone. At the beginning of the call you'll be informed that the call will be recorded, and asked to verbally assent to being recorded. Please

	ensure you are in a private space to avoid being interrupted and so you are able to speak freely. Thank you again for participating in the study. Best regards, Viet.
Interview Preparation	- Semi-structured interview guide - 2x recorders (laptop and a recorder)

Appendix 9: Participant Semi-structured Interview Guide

ATTACHMENT G: SEMI-STRUCTURED INTERVIEW GUIDE - PROGRAM PARTICIPANTS (PART 2)

(FOLLOW-UP TELEPHONE INTERVIEW)

DATE: _____

STUDY ID: _____

PROGRAM NUMBER: _____

Verbal assent (audio recorded):

Do you consent to doing this interview, and do you consent to having the interview audio recorded so that it can be transcribed to help us (the research team) analyse the data?

Circle: Yes/No (Consent/Interview)

Circle: Yes/No (Consent/Audiotaping)

Interview preamble:

In this interview, we are interested in gaining an understanding of your experience of the PRiN resilience program. We are not looking for 'right' or 'correct' responses. We are interested in how the program may have impacted on you and your nursing practice.

You do not need to answer a question if you do not want to. If you feel distressed at any point you can stop the interview or withdraw from the interview at any time. If you feel upset or distressed as a result of your participation in the study, you may find support through Melbourne Health's Employee Assistance Program (EAP) or ring Lifeline Ph.: 131114.

Experiences of the program

1. Can you please tell me about your experiences of participating in the program?
    a. Prompts: First impressions; Value of learning activities; Facilitators; Group

2. What were the most helpful components of the program for you?
    a. Prompts: Structure and sessions of program; group activities; homework activities; Facilitator(s); setting
    b. Please provide examples

Effectiveness of the program

3. How helpful (if at all) has the program been to you personally?
    a. Prompts: sense of well-being; understanding of resilience; understanding and drawing on strengths; improving communication skills, etc.
    b. Please provide examples

4. How has the program (if at all) impacted on your nursing practice?
    a. Prompts: quality of practice; interpersonal relationships with consumers; interpersonal relationships with colleagues/peers, etc
    b. Please provide examples

5. Please describe the nature of any changes in your nursing practice since the program.
    a. Prompts: empathy; relationship building, etc.
    b. Please provide examples

6. How has COVID-19 impacted you personally, and on your nursing practice?

7. How helpful (if at all) has the program been in the context of COVID-19?
    a. Prompts: COVID-19 and resilience, staff perception about resilience program during COVID-19.
    b. Please provide examples

8. Is there anything else you would like to say about participating in the program that we haven't covered?

Appendix 10: Barriers and Facilitators Survey Collection Procedure

Inviting managers/team leaders to complete the survey	- The day after program day 2, email managers a formal REDCap invitation to complete the managers' survey. - Only send this to managers once all their program group staff have completed the program. This means if a nurse cannot attend and is reallocated to the following program then the manager survey should be delayed until the end of the following program. - Monitor survey completion status in REDCap. Send reminders through REDCap and email managers with incomplete surveys. Check manager surveys and follow-up with them if their responses are inadequate. - If the managers/team leaders have not returned the survey or communication, contact the managers by phone (a maximum of three times) to invite them to complete the survey over the phone.
Email Template	Dear (Manager/Team Leader), As you are aware, NorthWestern Mental Health and Australian Catholic University and their partners are conducting a randomized controlled trial of a resilience education program (PRiN: Promoting Resilience in Nurses) for nurses across NorthWestern Mental Health. This email is an invitation for you to participate in evaluation of the process of implementing the PRiN project. You are invited to take part because you are a manager or team leader of a NWMH team/unit who has been involved in releasing nurses to participate in the PRiN Resilience Program at NWMH. Your participation entails completing a brief survey of approximately 10 minutes about your perspectives on staff involvement in the project. You do not have to participate in this survey. If you agree to participate, your responses are anonymous and will be aggregated with other responses. In any publication of the results, survey findings will be aggregated, and you cannot be identified. Your

	responses will not affect your role or future prospects at Melbourne Health or NWMH. Completing this survey implies your informed consent to participate in the evaluation. Please find included the link to the online survey in REDCap for you to complete: [Survey Link] If you have any queries, please don't hesitate to be in contact. Many thanks for participating in the evaluation of the PRiN resilience program. Best regards, Viet.

Appendix 11: Barriers and Facilitators Survey for Managers

BARRIERS AND FACILITATORS SURVEY FOR MANAGERS

DATE: _____

NWMH AREA: _____ (drop down menu)

NWMH UNIT/TEAM: _____ (drop down menu)

This survey is anonymous, and the findings will be aggregated with other responses

In regard to the PRiN Resilience Program, please select how much you agree or disagree with the following statements

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. The expectations of my role when my staff participated in the PRiN resilience program were clear					
	Comments:				
2. The process of inviting staff to participate in the PRiN resilience program was straightforward					
	Comments:				
3. Rostering and covering shifts for staff that participated in the PRiN resilience program was manageable					
	Comments:				
4. I consider it beneficial for nurses to participate in the PRiN resilience program					
	Comments:				
5. I noticed positive changes in the clinical practices of nurses that participated in the PRiN resilience program					
	Comments:				
Drop down comment sections will be also available for each question					

6. **What were the greatest <u>facilitators</u> (e.g. organisational/staff-related/manager-related) to nurses participating in the PRiN resilience program? (open-ended responses)**
    a.

7. **What were the greatest <u>benefits</u> (e.g. organisational/staff-related/practice-related) to your unit/team of nurses participating in the PRiN resilience program? (open-ended responses)**
    a.

8. **What were the greatest <u>challenges</u> (e.g. organisational/staff-related/practice-related) for your unit/team with nurses participating in the PRiN resilience program? (open-ended responses)**
    a.

9. **What are your thoughts on this Promoting Resilience in Nurses program?**
    a.

10. **Any other comments or suggestions about the process of nurses participating in the PRiN resilience program?**
    a.

Thank you for your involvement in this survey of the PRiN Program and for your valuable feedback

Appendix 12: Program Fidelity Survey Collection Procedure

Inviting program facilitators to complete the fidelity checklist	- 2 weeks before the program day 1, send facilitators email inviting them to participate in the evaluation of the study by filling out the fidelity checklist. Ask the facilitators to print out the checklist. - After the first day of the program, informally contact the facilitators about any issues that may have affected program implementation or any comments they have. Note anything relevant they say in regard to program fidelity/implementation and add this to their fidelity checklist (if needed) when it is collected after Day 2. - On the second day of the program, collect the fidelity checklist from the facilitators and quickly review it, asking the facilitators to fill in anything that is missing, elaborate on points, and clarify responses as required.
Email Template	Dear PRiN Program Facilitator As you are aware, NorthWestern Mental Health and Australian Catholic University and their partners (Queensland University of Technology, Monash University, University of Technology Sydney, Department of Health and Human Services Victoria, Australian Nursing and Midwifery Federation, and Health and Community Services Union) are conducting a randomized controlled trial of a resilience education program (PRiN; Promoting Resilience in Nurses) for nurses across NorthWestern Mental Health. This email is an invitation for you to participate in evaluation of the process of implementing the PRiN program. You are invited to take part because you are a program facilitator. Your participation involves completing a program fidelity checklist for each of the program modules over the 2 days of program delivery. The checklist will take approximately 10 minutes in total. You do not have to participate in this evaluation. If you agree to participate, your responses to the checklist will be anonymous and confidential. In any publication of the results of the evaluation,

	information will be aggregated, and you cannot be identified. Your responses will not affect your role or future prospects at NWMH. Completing this fidelity checklist implies your informed consent to participate in the evaluation. Please find attached the fidelity checklist for you to complete. If you have any queries, please don't hesitate to be in contact. Many thanks for participating in the evaluation of the PRiN resilience program. Best regards, Viet.

PRiN - Resilience Education Program for Nurses

Program Facilitator Fidelity Checklist – Program ....., Day 1

Facilitator Name	Co-facilitator Name	Area	Date

Instructions

For each segment within each session, please tick the appropriate box to indicate the level of completion ('Yes', 'Yes, in part', 'No'). Also rate the level of participant engagement and perceived usefulness of each segment by entering a number between 1 and 5 (1 = not at all, 2 = somewhat, 3 = neutral, 4 = mostly, 5 = very).

When entering comments, please address the following two points: 1) how was the segment received?, and 2) were there any process issues with delivery of the segment?

Additionally, you may also like to include comments about environmental factors or other observations.

There is a comments section at the end of each day for general comments not specific to any session or segment.

Session 1 - WE CAN ALL BE RESILIENT

		Completed? (tick the appropriate box for each segment)			Participant (insert a number from 1-5, 1=not at all, 5=very)	
		Yes	Yes in part	No	Engagement	Usefulness
	Introduce Program					
Comments						
	Define resilience and related contests					
Comments						
	Identifying and building your individual strengths					
Comments						
	Introduce the PRiN model					
Comments						

Session 2 - COOL AND CALM: UNDERSTANDING AND MANAGING STRESS

		Completed? (tick the appropriate box for each segment)			Participant (insert a number from 1-5, 1=not at all, 5=very)	
		Yes	Yes in part	No	Engagement	Usefulness
	Understanding sources of stress					
Comments						
	Understanding how stress affects us					
Comments						
	How are we more effective when we are calm?					
Comments						
	Exploring ways of keeping calm using the PRiN model					
Comments						
	Practice relaxing					
Comments						

Session 3 - I AM WHAT I THINK AND I CAN CHANGE WHAT I THINK

		Completed? (tick the appropriate box for each segment)			Participant (insert a number from 1-5, 1=not at all, 5=very)	
		Yes	Yes in part	No	Engagement	Usefulness
	Identifying and challenging unhelpful self-talk					
Comments						
	Learning ways to challenge unhelpful self-talk					
Comments						
	Practice challenging unhelpful self-talk					
Comments						
	Practice thinking resiliently					
Comments						

Additional comments from Day 1

- General comments about delivering the program:

- Any issues related to delivering all aspects of the program

- Any issues re communication with program participants (e.g. communicating with participants prior to Day 1; group dynamics and participation)

- Any technological issues (e.g. computer, PowerPoint, ability to show all program videos, etc)

- Any issues related to the venue (facility, room space, parking…) and catering

PRiN - Resilience Education Program for Nurses

Program Facilitator Fidelity Checklist – Program ....., Day 2

Facilitator Name	Co-facilitator Name	Area	Date

Instructions

For each segment within each session, please tick the appropriate box to indicate the level of completion ('Yes', 'Yes, in part', 'No'). Also rate the level of participant engagement and perceived usefulness of each segment by entering a number between 1 and 5 (1 = not at all, 2 = somewhat, 3 = neutral, 4 = mostly, 5 = very).

When entering comments, please address the following two points: 1) how was the segment received?, and 2) were there any process issues with delivery of the segment?

Additionally, you may also like to include comments about environmental factors or other observations.

There is a comments section at the end of each day for general comments not specific to any session or segment.

Session 4 - PROMOTING POSITIVE RELATIONSHIPS

		Completed? (tick the appropriate box for each segment)			Participant (insert a number from 1-5, 1=not at all, 5=very)	
		Yes	Yes in part	No	Engagement	Usefulness
	How do we promote harmony?					
Comments						
	Practice empathetic communication					
Comments						

Session 5 - MANAGING CONFLICT AND DRAWING STRENGTH FROM ADVERSITY

		Completed? (tick the appropriate box for each segment)			Participant (insert a number from 1-5, 1=not at all, 5=very)	
		Yes	Yes in part	No	Engagement	Usefulness
	Dealing with conflict positively					
Comments						
	Recognising our support systems					
Comments						
	Exploring post traumatic growth					
Comments						
	Promoting a sense of belonging					
Comments						

Session 6 - PUTTING IT ALL TOGETHER

		Completed? (tick the appropriate box for each segment)			Participant (insert a number from 1-5, 1=not at all, 5=very)	
		Yes	Yes in part	No	Engagement	Usefulness
	Creating our own solutions for wellbeing					
Comments						
	Acknowledging how far we have come					
Comments						
	Ending on a positive note					
Comments						
	Saying goodbye					
Comments						

Additional comments from Day 2

- General comments about delivering the program:

- Any issues related to delivering all aspects of the program:

- Any issues re communication with program participants (e.g. weekly reminder texts between workshop days; group dynamics and participation)

- Any technological issues (e.g. computer, PowerPoint, ability to show all program videos, etc)

Any issues related to the venue (facility, room space, parking…) and catering

Appendix 14: Transcription Service Non-Disclosure Agreement

TRANSCRIPT DIVAS AUSTRALIA. CLIENT NON-DISCLOSURE AGREEMENT.

TABLE OF CONTENTS

Parties

NAME: ADRIAN LAUGHLIN

ADDRESS: L1 NORTH, ROYAL MELBOURNE HOSPITAL, 300 GRATTAN ST, PARKVILLE, VIC 3050

ABN / ACN (if applicable): _____

(***Discloser***)

NAME: Andrew Dodson (trading as Transcript Divas Australia)

ADDRESS: 14/365-377 Kent St, Sydney NSW 2000, Australia

ABN: 44 925 005 362

(***Recipient***)

Background

A. The Discloser wishes to engage the services of the Recipient and to disclose Confidential Information to the Recipient only for the Permitted Purpose.

B. In consideration of the Discloser disclosing the Confidential Information to the Recipient and agreeing to engage the services relating to the Permitted Purpose with the Recipient, and the Recipient agreeing to keep the Confidential Information confidential and providing services relating to the Permitted Purpose with the Discloser, the Parties have agreed to undertake the obligations set out in this Agreement.

C. The Parties have agreed to disclose and receive that Confidential Information on the terms and conditions of this Agreement.

Terms and Conditions

1 Definitions and interpretation

1.1 **Definitions**

In this Agreement the following words and phrases have the following meanings (unless the context otherwise requires):

Business Days means any day other than a Saturday, Sunday or public holiday in the Jurisdiction.

Confidential Information means information that:

(a) is by its nature confidential;

(b) is designated by the Discloser as confidential; or

(c) the Recipient knows or ought to reasonably have known is confidential in nature;

(d) and includes all information which related to the Permitted Purpose, whether in a Document or provided orally but does not include information which:

(e) is or becomes public knowledge other than by breach of this Agreement or by any other unlawful means;

(f) is in the possession of the Party without restriction in relation to disclosure before the date of receipt from the other Party;

(g) is by law or the rules of any stock exchange required to be disclosed by the Recipient; or

(h) has been independently developed, gained or acquired by the Recipient without any reference to the Confidential Information.

Consequential Loss means any loss recoverable at law other than arising in the usual course of things and includes any consequential or economic loss including:

(a) loss of anticipated or actual profits or revenue;

(b) loss of production or use;

(c) financial or holding costs;

(d) loss or failure to realise any anticipated savings;

(e) loss of business or business interruption;

(f) loss or denial of business or commercial opportunity;

(g) loss of or damage to goodwill, business reputation, future reputation or publicity;

(h) downtime costs or wasted overheads; and

(i) special, punitive or exemplary damages.

Document includes:

(a) any paper or other materials on which there is writing, marks, figures, symbols or perforations having a meaning for persons qualified to interpret them;

(b) any article or material from which sounds, images or writing are capable of being reproduced with or without the aid of any other article or device; and

(c) information in a form of data, text, or images stored or communicated by means of guided or unguided electromagnetic energy, or both.

Intellectual Property Rights includes all copyright and neighbouring rights, all rights in relation to inventions and discoveries (including patent and utility model rights), plant varieties, registered and unregistered trademarks (including service marks), registered designs, Confidential Information (including trade secrets and know how) and circuit layouts, and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields including applications for grant of any of these rights or other rights of a similar nature arising (or capable of arising) anywhere in the world.

Parties means both the Discloser and the Recipient referred together.

Permitted Purpose means to provide transcription services of Audio or Video recordings to the Discloser.

Jurisdiction means **New South Wales, Australia.**

1.2 **Interpretation**

(a) In this Agreement unless specified to the contrary:

(i) the singular includes the plural and vice versa;

(ii) use of the word including and similar expressions are not, nor are they to be interpreted as, words of limitation;

(iii) a reference to a person includes a natural person, a company or other entities recognised by law;

(iv) a reference to writing includes any mode of reproducing words, figures or symbols in tangible and permanently visible form and includes electronic transmission; and

(v) a reference to a party includes the party's executors, administrators, successors and permitted assigns.

(b) The language in all parts of this Agreement is to be in all cases construed in accordance with its fair and common meaning and not strictly for or against either of the parties.

(c) This Agreement is to be interpreted so that it complies with all applicable laws of the Jurisdiction and if any provision does not comply then it must be read down so as to give it as much effect as possible. If it is not possible to give that provision any effect at all then it is to be severed from this Agreement and this Agreement is to be construed as if the severable portion did not exist. The remainder of this Agreement will continue to have full force and effect.

(d) Any headings are for ease of reference only and do not affect the interpretation of this Agreement.

2 Confidentiality Obligations

2.1 Confidentiality

The Recipient:

(a) acknowledges the confidential, sensitive, and proprietary nature of the Confidential Information and that it is valuable to the Discloser; and

(b) agrees to keep confidential, and not directly or indirectly divulge or communicate or otherwise disclose the Confidential Information, in whole or part, to any third party.

2.2 Use of Confidential Information

The Recipient must not:

(a) use any of the Confidential Information for any purpose other than the Permitted Purpose;

(b) exploit the Confidential Information for its own benefit, for the benefit of any other person or for any other purpose, or allow any other person to do so without the prior written consent of the Discloser (which may be withheld in its absolute discretion);

(c) use any of the Confidential Information in a manner or for a purpose detrimental to the Discloser or its related bodies corporate (if any); or

(d) use any Confidential Information that has been returned to the Discloser under clause 3 of this Agreement (unless express permission is granted in writing by the Discloser to continue use that Confidential Information).

2.3 Protection of Confidential Information

The Recipient must;

(a) keep effective control of all Confidential Information received under or in connection with this Agreement;

(b) take all precautions that are reasonably necessary to prevent any theft, loss or unauthorised use or disclosure of that Confidential Information, this includes but is not limited to the implementation and use of the following security processes

SECURITY PROCESS
Email is enabled with two factor authentication.
Cloud based systems are enabled with two factor authentication e.g. dropbox, google drive etc.
Computer& Mobile Phone devices are locked with passwords that only the receiving party has knowledge of.
Computer hard drives are encrypted.

(c) must promptly inform the Discloser of any suspected or actual unauthorised use or disclosure of the Discloser's Confidential Information.

2.4 **Authorised Recipients**

(a) The Recipient may disclose the Confidential Information to its directors, officers, agents, employees, advisers, and financiers on a strictly "need to know" basis provided that:

(i) The Recipient must ensure that these persons are under equivalent obligations of confidence to the Recipient as provided in this Agreement; and

(ii) The Recipient ensures compliance by these persons with the terms and conditions of this Agreement which impose any obligation on the Recipient, as if those persons were a party to this Agreement; and

(b) A breach of such a term or condition by such a person shall be regarded as a breach of this Agreement by the Recipient.

3 Return of Confidential Information

Within 60 days of completing the permitted purpose for the Discloser or upon the written request of the Discloser, the Recipient must promptly return (or procure the return of) to the Discloser the following (or, if any of the following is incapable of being returned, irretrievably destroy or delete and be willing to certify in writing that it has been so destroyed or deleted):

(a) the Confidential Information of the Discloser; and

(b) all copies, extracts, summaries, notes and records in whatever form (including, without limitation, any electronic records or any unwritten form) of the whole or any part of the Confidential Information of the Discloser.

(a) keep effective control of all Confidential Information received under or in connection with this Agreement;

(b) take all precautions that are reasonably necessary to prevent any theft, loss or unauthorised use or disclosure of that Confidential Information, this includes but is not limited to the implementation and use of the following security processes

SECURITY PROCESS
Email is enabled with two factor authentication.
Cloud based systems are enabled with two factor authentication e.g. dropbox, google drive etc.
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(b) all copies, extracts, summaries, notes and records in whatever form (including, without limitation, any electronic records or any unwritten form) of the whole or any part of the Confidential Information of the Discloser.

4 Intellectual Property Rights

The Recipient acknowledges that there is no transfer or licence to it or any third party of any Intellectual Property Rights in and to, or arising from, any Confidential Information disclosed under or in connection with this Agreement.

5 Acknowledgements

The Recipient acknowledges that:

(a) a breach of any of the Recipients' obligations under this Agreement may result in the Discloser suffering loss and damage including, without limitation, Consequential Loss, and may cause irreparable damage to the Discloser; and

(b) in the event of a breach, or threatened or anticipated breach, of this Agreement:

(i) damages alone may be an inadequate remedy for the Discloser; and

(ii) that the Discloser entitled to seek an interim, interlocutory or permanent injunction restraining the Recipient without showing or proving any actual loss or damages sustained by the Discloser.

6 Duration of Obligations

The obligations imposed by this Agreement continue indefinite.

7 Notices

(a) Any notice to be given to one party by another under this Agreement:

(i) must be in legible writing, in English and addressed to the intended recipient; and

(ii) must be delivered to the recipient in person or by courier hand delivery, by prepaid ordinary post, by facsimile or by email; and

(iii) must be signed by an authorised officer of the party giving or making it, or (on its behalf) by any solicitor, director, secretary or authorised agent of that party.

(b) A notice is regarded as being given by the sender and received by the recipient:

(i) if by delivery in person, when delivered to the recipient;

(ii) if by post, three Business Days from and including the date of postage;

(iii) if by facsimile transmission, whether or not legibly received, when the machine from which the facsimile is sent generates a transmission report confirming that all pages of the notice have been sent to the recipient's facsimile number; or

(iv) if by email, immediately unless sender receives an automated reply that the email was not delivered by reason of the address being invalid or otherwise.

(c) If a notice is received on a day which is not a Business Day or after 5:00pm on a Business Day, that notice is regarded as received 9:00am on the following Business Day.

8 Termination

If the Recipient breaches this Agreement, the Discloser may terminate this Agreement by providing written notice in accordance with clause 7 to the Recipient.

Upon termination of the Agreement under this clause:

(a) The Recipient must destroy or deliver to the Discloser any Confidential Information that was made available to the Recipient under or in anticipation of this Agreement; and

(b) Rights accrued by the Parties under Intellectual Property Rights (clause 4), and Acknowledgments (clause 5) of this Agreement survives termination and is enforceable against the Recipient notwithstanding termination.

9 General Conditions

9.1 Date of provision of Confidential Information

This Agreement binds the Recipient in respect of any and all Confidential Information provided by the Discloser to the Recipient, whether the Confidential Information was provided to the Recipient prior to or after the date of this Agreement.

9.2 Non-Merger of Provisions

A provision of this Agreement which can and is intended to operate after its conclusion will remain in full force and effect.

9.3 No Exclusion of Law or Equity

This Agreement will not be construed to exclude the operation of any principle of law or equity intended to protect or preserve the confidentiality of any Confidential Information.

9.4 Waiver

(a) A single or partial exercise or waiver of a right relating to this Agreement will not prevent any other exercise of that right or the exercise of any other right.

(b) A party will not be liable for any loss, cost or expense of any other party caused or contributed to by any waiver, exercise, attempted exercise or failure to exercise, or any delay in the exercise of, a right.

(c) A right expressed under this Agreement may only be waived by a party in writing and communicated to the other party to the extent that is expressly set out in that waiver.

9.5 No Amendments without Agreement

This Agreement may not be modified, discharged or abandoned unless by a document signed by the parties.

9.6 Agreement in Entirety

The Parties agree that this Agreement contains the entire agreement between the Parties and supersedes any prior written agreements in existence (whether in writing or otherwise).

9.7 Jurisdiction

This Agreement is to be governed by and construed in accordance with all applicable laws in force in the Jurisdiction from time to time, and the parties submit to the non-exclusive jurisdiction of the courts of the Jurisdiction.

EXECUTED and **DELIVERED** as a deed on 19/5/21

SIGNED SEALED AND DELIVERED by

_____

ABN / ACN _____

[redacted]

Signature

ADRIAN LAUGHLIN

Name

SIGNED SEALED AND DELIVERED by
Andrew Dodson ABN 44 925 005 362 trading
as Transcript Divas Australia

_____

Signature

Andrew Dodson

Name

Appendix 15: Psychological distress, well-being, resilience, posttraumatic growth, and turnover intention of mental health nurses during COVID-19: A cross-sectional study

Full citation for the article is as follows:

Foster, K., Shakespeare-Finch, J., Shochet, I., Maybery, D., Bui, M. V., Steele, M., & Roche, M. (2024). Psychological distress, well-being, resilience, posttraumatic growth, and turnover intention of mental health nurses during COVID-19: A cross-sectional study. International Journal of Mental Health Nursing, 33(5), 1543–1552. https://doi.org/10.1111/inm.13354

Article attached in the next page

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International Journal of Mental Health Nursing

ORIGINAL ARTICLE

Psychological distress, well-being, resilience, posttraumatic growth, and turnover intention of mental health nurses during COVID-19: A cross-sectional study

Kim Foster[1] | **Jane Shakespeare-Finch**[2] | **Ian Shochet**[2] | **Darryl Maybery**[3] | **Minh Viet Bui**[1] | **Michael Steele**[4,5] | **Michael Roche**[6,7,8]

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Email: kim.foster@acu.edu.au

Funding information
Australian Nursing and Midwifery Federation; Australian Research Council, Grant/Award Number: LP180101112; Health and Community Services Union; Department of Health and Human Services, State Government of Victoria

Abstract

Mental health nurses (MHNs) experience a range of stressors as part of their work, which can impact their well-being and turnover intention. There is no prior evidence, however, on MHNs' mental health, well-being, resilience, and turnover intention during the COVID-19 pandemic. The aims of this online survey-based cross-sectional study, conducted during the pandemic, were to explore the psychological distress, well-being, emotional intelligence, coping self-efficacy, resilience, posttraumatic growth, sense of workplace belonging, and turnover intention of $n = 144$ Australian mental health registered and enrolled nurses; and explore relationships between these variables, in particular, psychological distress, well-being, and turnover intention. There was a higher percentage of MHNs with high (27.78%) and very high psychological distress (9.72%) compared to population norms as measured by the K10. Emotional intelligence behaviours were significantly lower than the population mean (GENOS-EI Short). Coping self-efficacy was mid-range (CSES-Short). Resilience was moderate overall (Brief Resilience Scale), and posttraumatic growth was mid-range (Posttraumatic Growth Inventory; PTGI). Sense of workplace belonging was moderate, and turnover intention was low. Higher levels of psychological distress were associated with higher turnover intention, and lower workplace belonging, coping self-efficacy, well-being, resilience, and emotional intelligence behaviours. Despite the levels of psychological distress, nearly half the sample ($n = 71$) was 'flourishing' in terms of well-being (Mental Health Continuum Short-Form). To help prevent staff distress in the post-pandemic period, organisations need to proactively offer support and professional development to strengthen staff's psychological well-being, emotional intelligence, and resilience skills. These strategies and group clinical supervision may also support lower turnover.

KEYWORDS
COVID-19, mental health nursing, posttraumatic growth, resilience, turnover intention, well-being

INTRODUCTION

Mental health nursing is well recognised as a challenging field of work, and nurses can experience a range of role-related and organisation-related stressors (Foster et al., 2021). The COVID-19 pandemic has added additional stress, heightened anxiety, and fear of infection in the community (Usher et al., 2020) and led to

unprecedented demands and workload pressures for healthcare professionals (Foye et al., 2021; Ward-Miller et al., 2021). Although there is some international literature on the practice concerns of mental health nurses during the COVID-19 pandemic (Foye et al., 2021; Ward-Miller et al., 2021), there is no prior evidence on their psychological distress, well-being, resilience, posttraumatic growth, and turnover intention during the pandemic in the Australian context. Understanding the well-being and resilience of this essential mental health workforce during a period of exceptional challenge can inform tailored support and strategies to help reduce workplace stress, enhance staff well-being, and improve workforce retention in the future.

BACKGROUND

Due to the interpersonal nature of their practice, mental health nurses (MHNs) use themselves as the therapeutic tool to partner with and deliver care to mental health consumers (Delaney et al., 2017). Key stressors MHNs face in their relational work with consumers and carers include bearing witness to others' distress, supporting consumers who are self-harming and/or suicidal, and managing aggression and conflict (Baby et al., 2014; Cranage & Foster, 2022). Colleague-related stressors include bullying, working with unmotivated or unsupportive staff, and conflicts in clinical decision-making (Foster et al., 2021; McTiernan & McDonald, 2015). At an organisational level, MHNs are often subjected to heavy workloads, inadequate staffing and poor skill mix, and lack of organisational support (e.g. training) and resources (hospital beds and functional equipment) (Cranage & Foster, 2022; McTiernan & McDonald, 2015).

Since the start of the global COVID-19 pandemic in 2020, in addition to increased care demands (Abbas et al., 2021), MHNs also needed to adapt to rapid service restructuring and changes related to social distancing guidelines, infection prevention control and personal protective equipment use, and modifications of workplace procedures (e.g. ECT) or consumer care policies (e.g. reduced consumer movement; Ward-Miller et al., 2021). The work setting nurses practiced in played a role, with MHNs in inpatient and community settings reporting different patterns of distress and working conditions. For instance, MHNs working in inpatient units reported increased workloads and concerns about exposure to COVID-19 (Foye et al., 2021; Rapisarda et al., 2020). Those working in the community struggled to provide good care due to reduced outreach frequency (Johnson et al., 2021) and the shift from face-to-face interactions to telemedicine (Foye et al., 2021).

In prior research, workplace stress has been identified to impact MHNs' health and well-being, resilience, and intention to leave. Nurses have reported burnout (McTiernan & McDonald, 2015), lower mental health (Delgado et al., 2021; Wang et al., 2022), reduced professional quality of life and job satisfaction (Itzhaki et al., 2018), and turnover intention (Kagwe et al., 2019). The negative impacts of workplace stress can also impact nurses' intention to remain in the workforce. Internationally, there is a current and predicted deficit of mental health nurses (Adams et al., 2021) that poses major challenges to maintaining a sustainable workforce. A study with $n = 7933$ Chinese MHNs, for example, revealed that 20.2% ($n = 1599$) of nurses intended to leave their jobs (Jiang et al., 2019). In the face of workplace stress, there is an urgent need to identify factors that support MHNs' well-being and improve workforce retention. Equally, the challenges presented by COVID-19 provide an opportunity to further examine the impact of an extraordinary public health stressor on the well-being and intentions of MHNs, including enrolled nurses (ENs) about which little is known.

In the context of workplace stress, resilience is a dynamic process of positive adaptation to adversity that leads to recovery of well-being (McLarnon & Rothstein, 2013). This process involves self-regulatory affective, cognitive, and behavioural factors, protective personal resources, and environmental resources. Personal resources include coping self-efficacy (feelings of competence against challenging tasks; Chesney et al., 2006) and emotional intelligence behaviours (ability to perceive, understand, and use self and others' emotions to regulate emotions; Gignac, 2010). Resilience has been positively associated with MHNs' psychological well-being and negatively associated with mental distress (Delgado et al., 2021; Foster et al., 2020), but there are no prior MHN studies investigating its relationship with emotional intelligence.

In respect to work, a sense of belonging is the extent to which a person feels acceptance, respect, inclusiveness, and support from others (Cockshaw & Shochet, 2010). In other stressful healthcare professions (e.g. ambulance clinicians), workplace belonging has been associated with higher resilience and psychological well-being (Shakespeare-Finch & Daley, 2017) and has the potential to mitigate job-related psychological distress (Cockshaw & Shochet, 2010; Shakespeare-Finch & Daley, 2017) and burnout (Somoray et al., 2017). The relationships between workplace belonging, resilience, psychological well-being, distress, and turnover intention, however, have not been explored in mental health nursing. Posttraumatic growth (PTG) is a related but distinct construct from resilience that involves positive psychological changes after a traumatic event which challenge a person's core beliefs and assumptions. This experience can lead to transformation and growth and changes in life priorities, better appreciation for interpersonal relationships, and a more positive view of personal strengths (Tedeschi et al., 2018). Mental health nurses that are exposed to occupational violence and traumatic events in the workplace (e.g. witnessing self-harm or suicidal

behaviours) may develop PTG (Itzhaki et al., 2015). Findings to date on the relationship between PTG, psychological well-being, distress, and resilience, however, have been inconclusive (Tedeschi et al., 2018), and further research is needed to establish the relationship of resilience to PTG and psychological well-being of MHNs exposed to traumatic events.

In respect to COVID-19, two prior studies have investigated the impact of the pandemic on the health and mental well-being of mental health nurses (Kameg et al., 2021; King et al., 2022). They found that mental health nurses (US, $n = 151$; Kameg et al., 2021, Ireland, $n = 161$; King et al., 2022) experienced psychological distress (i.e. depression, anxiety, and posttraumatic stress) during COVID. There is no other empirical literature on the direct impacts of other public health crises or disasters on MHN well-being, and no prior evidence internationally on MHNs' (registered and enrolled nurses) mental health, well-being, resilience, posttraumatic growth and turnover intention, or the relationships between these, during the pandemic. To address this gap in knowledge the aims of the study were to explore the psychological distress, well-being, emotional intelligence, coping self-efficacy, resilience, posttraumatic growth, sense of workplace belonging and turnover intention of $n = 144$ Australian mental health registered and enrolled nurses; and explore relationships between these variables, in particular, psychological distress, well-being, and turnover intention.

METHODS

Research design

This study comprises the baseline findings from a randomised controlled trial of a resilience intervention with mental health nurses (ACTRN12620001052921). A cross-sectional, descriptive, correlational design was used. The design is suitable to analyse the characteristics of a sample and assess the association between measures at one point in time (Kesmodel, 2018). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement (Vandenbroucke et al., 2007) guided the reporting of this study. The study received ethics approval from the Melbourne Health Human Research Ethics Committee (HREC/56912/MH-2020) and relevant University Human Research Ethics Committees (2020-127RC). Participants were provided with relevant information about the study, and completion of the online survey implied informed consent.

Study setting and participants

The study was conducted at a large tertiary metropolitan mental health service in Victoria, Australia. Nurses (enrolled or registered) working clinically at least 0.6 full-time equivalent were eligible to participate and were recruited using convenience sampling. An email invitation and online survey link via REDCap, with several reminders, were distributed to staff via their unit/team managers.

Data collection

Data were collected between February 2021 and March 2022. Data collection occurred throughout the COVID-19 pandemic and was affected by several lockdowns in Victoria, Australia between February and October 2021.

Instruments

Participants provided demographic information on gender, age, current work setting, years of experience in mental health and in nursing, registered or enrolled nurse role, and whether they had clinical supervision. *Psychological distress* was assessed with the 10-item Kessler Psychological Distress Scale (K10) (Andrews & Slade, 2001). This scale measures core dimensions of non-specific psychological distress based on anxiety and depressive symptoms. Feelings in the past 30 days are ranked from 'all of the time' to 'none of the time' on a 5-point Likert scale. Scores can range between 10 and 50, with scores between 10 and 15 representing low, 16–21 moderate, 22–29 high and 30–50 very high psychological distress. Strong reliability was reported in this study ($\alpha = 0.88$). *Well-being* was assessed using the 14-item short form of the Mental Health Continuum (MHC-SF; Keyes et al., 2008). This form measures mental health and psychological, social, and emotional well-being. Frequency of feelings in the past month is ranked from 'never' to 'every day' on a 6-point scale. Scores range between 0 and 70. There are three dimensions: emotional, social, and psychological well-being. To be flourishing, individuals need to report 'every day' or 'almost every day' for 1 of the 3 hedonic well-being (i.e. emotional well-being) symptoms and 6 of the 11 positive functioning symptoms. Languishing is when 'never' or 'once or twice' are reported for 3 of the hedonic well-being symptoms and 6 of the 11 positive functioning symptoms. Individuals who are neither flourishing nor languishing are considered 'moderate' (Keyes et al., 2008). Strong reliability was reported in this study ($\alpha = 0.92$).

Emotional intelligence behaviours were assessed with the 14-item Genos Emotional Intelligence Inventory – Short (GENOS-EI; Palmer et al., 2009) which measures typical emotional functioning and behaviour at work through self-awareness, emotional expression, emotional awareness of others, emotional reasoning,

emotional self-management, emotional management of others, and emotional self-control. Participants rank frequency of thinking, feeling, and action from 'almost never' to 'almost always' on a 5-point Likert scale. Scores range between 14 and 70. Higher scores reflect higher emotional functioning. Strong reliability was reported in this study ($\alpha = 0.83$). *Coping self-efficacy* was assessed using the 13-item Coping Self-Efficacy scale (Short; CSES) which measures perceived ability to cope effectively with life challenges (Chesney et al., 2006). Items are ranked from 'cannot do at all' to 'certain can do' on an 11-point Likert scale. Scores range between 0 and 130. Higher scores indicate higher levels of self-efficacy with implementing positive coping strategies. Strong reliability was reported in this study ($\alpha = 0.93$). *Resilience* was assessed with the 6-item Brief Resilience Scale (BRS) (Smith et al., 2013), where resilience is defined as recovering from stress and coping with stressors. Statements are ranked from 'strongly disagree' to 'strongly agree' on a 5-point Likert scale. Scores range between 1 and 5. Scores below 3.0 can be interpreted as low, from 3.0 to 4.2 as moderate, and above 4.3 as high. Strong reliability was reported in this study ($\alpha = 0.84$).

Posttraumatic growth was assessed with the 21-item Posttraumatic Growth Inventory (PTGI) (Tedeschi & Calhoun, 1996), which measures positive changes following highly stressful and traumatic events. Items assess personal strength, new possibilities, relating to others, appreciation of life, and spiritual change. Prior to completing the measure, participants are asked if they have experienced a traumatic event, to briefly describe the event, when it occurred, and the perceived severity of trauma (from 1 = moderate to 4 = very severe). They rank effects of the event from 'not at all' to 'very great degree' on a 6-point Likert scale. Scores range between 0 and 105. Higher scores reflect greater posttraumatic growth. Strong reliability was reported in this study ($\alpha = 0.94$). *Workplace belonging* was assessed with 6 items on the Sense of Belonging subscale from the Psychological Sense of Organisational Membership Scale (PSOM) (Cockshaw & Shochet, 2010). Items measure feelings of being accepted, valued, and needed by an organisation. Participants rank how they feel at work from 'not at all true' to 'completely true' on a 5-point Likert scale. Scores range between 1 and 5. Higher scores reflect greater sense of belonging. The Cronbach's α in this study was 0.87. *Turnover intention* was measured with the 4-item Turnover Intention Scale (TIS) (Kelloway et al., 1999). The TIS measures thoughts about leaving the current organisation and seeking job opportunities. Participants rank items from 'strongly disagree to 'strongly agree' on a 5-point Likert scale. Scores range between 4 and 20. Higher scores reflect greater turnover intention. Strong reliability was reported in this study ($\alpha = 0.90$).

Data analysis

Scale and subscale scores were calculated as per each tool developer's instructions. Continuous outcomes were described with means (Ms) and standard deviations (SDs). Categorical outcomes were described with frequencies (*n*) and percentages (%). Where required, chi-square goodness-of-fit tests were used. Independent samples *t*-tests were used to determine differences between two continuous variables, and one-way ANOVAs were used when there were more than two variables. One-sample *t*-test was used to test if a mean differed from a previously published mean. Spearman's correlation coefficients were conducted to assess the relationships between measures. Significance was accepted at $p \leq 0.05$. Imputation was only used in a small number of cases where the participant had at least 80% of their data. Quantitative data were analysed with SPSS Version 29. Descriptions of traumatic events were categorised into work-related or personal events, within Excel.

RESULTS

Demographics

Descriptive statistics for demographic variables are presented in Table 1. There were 144 participants with a mean age of 30.67 years (SD = 7.78). There were more females (72.22%) than males (27.08%), which is generally representative of this workforce, and most (86.81%) were registered nurses. Just over half the nurses had access to clinical supervision.

Descriptive statistics

Descriptive statistics for the measures are presented in Table 2. *Psychological distress*: The sample mean for the K10 was 20.22 (SD= 6.37). There was a significant difference between the observed percentage of MHNs categorised as having low, moderate, high, and very high psychological distress, compared to the expected percentages based on population norms (Australian Bureau of Statistics, 2017–2018; $\chi^2 = 121.44$, df = 4, $N = 144$, $p < 0.001$). Specifically, there was a lower percentage of MHNs with low psychological distress (24.31%) than expected (60.80%) and a higher percentage of MHNs with moderate psychological distress (37.50%) than expected (21.90%). There was a higher percentage of MHNs with high psychological distress (27.78%) than expected (8.90%). There was a higher percentage of MHNs with very high psychological distress (9.72%) than expected (4.00%), which is indicative of a severe mental disorder (Australian Bureau of Statistics, 2012). Note that the Australian Bureau of Statistics total percentage also

TABLE 1 Participant demographics ($n = 144$).

Descriptor	Category	*n* (%)
Gender	Male	39 (27.08)
	Female	104 (72.22)
	Other	1 (0.70)
Age	20–29	42 (29.2)
	30–39	48 (33.3)
	40–49	22 (15.3)
	50+	23 (16.0)
	Missing	9 (6.3)
Professional role	RN	125 (86.8)
	EN	19 (13.2)
Specialist postgraduate mental health qualification (RNs/$n = 125$)	No	64 (51.20)
	Yes	61 (48.80)
Years working in mental health nursing	<1	45 (31.3)
	1–4.9	49 (34.0)
	5–9.9	22 (15.3)
	10–19.9	16 (11.1)
	20+	10 (6.9)
	Missing	2 (1.4)
Workplace setting	Inpatient	91 (63.19)
	Community	42 (29.17)
	Unknown	11 (7.64)
Clinical supervision ($n = 135$)	Yes	79 (54.9)
	No	56 (45.1)

Abbreviations: EN, enrolled nurse; RN, registered nurse.

includes 6.34% whose K10 score was not able to be determined, and in our study, there were 0.07% without a K10 score.

Well-being: The overall mean was 47.98 (SD = 12.20). Nearly half the sample was categorised as 'flourishing' ($n = 71$; 49.3%), with fewer categorised as 'moderate' ($n = 57$; 39.6%) or 'languishing' ($n = 16$; 11.1%). We compared psychological distress levels between the three categories of well-being (i.e. flourishing, moderate, and languishing). Psychological distress significantly differed between the three groups ($F(2, 140) = 18.05$, $p < 0.001$) and was significantly higher in the languishing group (M = 26.26, SD = 5.2) than the moderate (M = 21.71, SD = 5.72) group ($p = 0.017$), which in turn had significantly higher psychological distress than the flourishing (M = 17.65, SD = 5.83) group ($p < 0.001$). *Emotional intelligence behaviours*: The sample mean was 53.90 (SD = 6.79), which is significantly lower ($p < 0.001$) than the general population mean (M = 55.88) provided by Gignac (2010). *Coping self-efficacy*: The mean was 82.18 (SD = 20.91), which indicates moderate levels of self-efficacy. *Resilience*: The mean was 3.45 (SD = 0.70; which indicates moderate resilience), which was lower than the population mean of 3.70 by Smith et al. (2013). *Posttraumatic growth*: The mean was 61.03 (SD = 21.28) which indicates a mid-range score. Of the described traumatic events, 5.8% were reported by MHN as moderately traumatic, 16.7% as highly traumatic, 31.4% as severely traumatic, and 46.1% as very severely traumatic. The types of traumatic events included work-related events (e.g. occupational violence, workplace bullying, and witnessing consumer suicide/self-harm)

TABLE 2 Means and Standard Deviations by Role and Workplace Setting.

	Total	RN	EN		Inpatient	Community	
	M (SD)	M (SD)	M (SD)	*p*-value	M (SD)	M (SD)	*p*-value
Kessler Psychological Distress Scale ($n = 143$)							
Total	20.22 (6.37)	19.91 (6.38)	22.21 (6.12)	0.144	20.19 (6.65)	20.60 (5.99)	0.736
Mental Health Continuum – Short Form ($n = 144$)							
Total	47.98 (12.20)	48.56 (11.91)	44.16 (13.65)	0.142	49.10 (11.10)	45.87 (14.62)	0.163
Genos Emotional Intelligence Inventory – Short ($n = 144$)							
Total	53.90 (6.79)	54.39 (6.51)	50.62 (7.82)	0.024	53.74 (6.77)	53.51 (7.06)	0.857
Coping Self-Efficacy Scale ($n = 142$)							
Total	82.18 (20.91)	82.94 (20.88)	77.00 (20.95)	0.262	81.86 (19.40)	80.27 (24.33)	0.690
Brief Resilience Scale ($n = 144$)							
Total	3.45 (0.70)	3.47 (0.70)	3.32 (0.71)	0.393	3.43 (0.69)	3.42 (0.68)	0.987
Posttraumatic Growth Inventory ($n = 100$)							
Total	61.03 (21.28)	60.89 (21.89)	62.00 (16.91)	0.867	58.77 (22.54)	62.43 (19.84)	0.438
Psychological Sense of Organisational Membership ($n = 143$)							
Sense of Belonging	3.58 (0.81)	3.64 (0.78)	3.20 (0.92)	0.027	3.69 (0.75)	3.37 (0.89)	0.032
Turnover Intention Scale ($n = 144$)							
Total	7.94 (3.71)	7.70 (3.58)	9.53 (4.30)	0.046	7.78 (3.58)	8.60 (4.06)	0.244

and personal events (e.g. catching COVID, COVID lockdown, relationship breakdown, family violence, health deterioration, and death in the family). *Sense of workplace belonging*: The mean was 3.58 (SD = 0.81; which was moderate on this scale). *Turnover intention*: The mean was 7.94 (SD = 3.71; which indicates low turnover intent).

Comparisons between groups

There is very limited prior literature on ENs in mental health and on differences between nurses in community and inpatient mental health settings. The findings are explored in Table 2 for differences between RNs and ENs, and work settings (inpatient vs. community). Significant differences between RN and ENs were found for Emotional Intelligence Behaviours (RN > EN, $p = 0.024$), Sense of Workplace Belonging (RN > EN, $p = 0.027$), and Turnover Intention (EN > RN, $p = 0.046$). MHNs working in inpatient settings had significantly greater sense of belonging than nurses working in the community ($p = 0.032$). Otherwise, there were no significant differences in any of the measures between nurses working in these settings.

Correlations between measures

All correlations are presented in Table 3. Resilience was not significantly associated with posttraumatic growth ($r = 0.08$). Significant correlations of psychological distress, well-being, and turnover intention are described below. *Psychological distress*: higher psychological distress was associated with lower coping self-efficacy ($r = -0.42$), well-being ($r = -0.55$), sense of belonging ($r = -0.20$), resilience ($r = -0.38$), and emotional intelligence ($r = -0.43$). Higher psychological distress was also associated with higher turnover intention ($r = 0.33$). *Well-being*: higher well-being was associated with higher coping self-efficacy ($r = 0.58$), sense of belonging ($r = 0.37$), emotional intelligence ($r = 0.45$), resilience ($r = 0.40$), and posttraumatic growth ($r = 0.38$). Higher well-being was also associated with lower turnover intention ($r = -0.30$). *Turnover intention*: higher turnover intention was associated with lower coping self-efficacy ($r = -0.19$), sense of belonging ($r = -0.31$), resilience ($r = -0.21$), and emotional intelligence ($r = -0.30$).

DISCUSSION

The aims of this study were to explore the psychological distress, well-being, turnover intention, emotional intelligence, resilience, coping self-efficacy, posttraumatic growth, and workplace belonging of Australian MHN; and relationships between these variables. This is the first in-depth study to report Australian MHNs' mental health and well-being in the context of the COVID pandemic – a significant public health crisis. The findings provide new evidence in the field and during the pandemic. The psychological distress of MHNs in this study was markedly higher than Australian population norms across all levels of distress severity, with nearly 10% of the sample (9.72%) reporting very high psychological distress, indicating the likelihood of a severe mental disorder (e.g. depression and/or anxiety; Australian Bureau of Statistics, 2012). This finding is generally consistent with the findings reported by Wang et al. (2022) from Chinese MHNs, and with King et al. (2022) from US nurses during the pandemic, and with prior studies where MHNs have

TABLE 3 Spearman's correlation coefficients for associations between measures.

	1	2	3	4	5	6	7	8
1. K10: Psychological distress								
2. MHC-SF: Well-being	−0.55 ($p<0.001$)							
3. GENOS-EI: Emotional intelligence	−0.43 ($p<0.001$)	0.45 ($p<0.001$)						
4. CSES: Coping self-efficacy	−0.42 ($p<0.001$)	0.58 ($p<0.001$)	0.39 ($p<0.001$)					
5. BRS: Resilience	−0.38 ($p<0.001$)	0.40 ($p<0.001$)	0.42 ($p<0.001$)	0.49 ($p<0.001$)				
6. PTGI: Posttraumatic growth	−0.12 ($p=0.247$)	0.38 ($p<0.001$)	0.19 ($p=0.065$)	0.32 ($p=0.001$)	0.08 ($p=0.412$)			
7. PSOM: Sense of belonging	−0.20 ($p=0.015$)	0.37 ($p<0.001$)	0.44 ($p<0.001$)	0.25 ($p=0.003$)	0.33 ($p<0.001$)	0.15 ($p=0.141$)		
8. TIS: Turnover intention	0.33 ($p<0.001$)	−0.30 ($p<0.001$)	−0.30 ($p<0.001$)	−0.19 ($p=0.027$)	−0.21 ($p=0.012$)	−0.18 ($p=0.067$)	−0.31 ($p<0.001$)	

reported low mental health (Delgado et al., 2021; Foster et al., 2020). However, the mean K10 scores of MHN in the current study (mean = 20.22, SD = 6.37, n = 144) were higher than those from Wang et al. (2022) (mean = 17.88, SD = 6.57, n = 812), and 75% of our MHNs (compared to 70.3%; Wang et al., 2022) experienced moderate to very high psychological distress. It is likely that COVID-19 was an additional factor in our sample group's distress as there is other evidence of MHNs' high psychological distress during the pandemic (see, e.g. King et al., 2022). The experience of multiple lockdowns for Melbourne-based MHNs may have also contributed to their high levels of psychological distress. During the COVID period, Victorian adults had a small but statistically significant decline in their mental health compared to the rest of Australia (Butterworth et al., 2022).

Nevertheless, while our sample reported a high level of mental health difficulties, at the same time almost half (49.3%) of nurses were flourishing. Flourishing (or positive mental health) involves having a balanced life, where a person feels good about their life (subjective well-being) and is functioning well (social and psychological well-being). This includes self-acceptance, having a purpose in life, a sense of mastery and sense of belonging, positive connections, personal growth, and making contributions (Keyes et al., 2008). While nurses may have experienced distress related to the stress of their work and the impacts of the pandemic, at the same time our findings also indicate they had personal characteristics and resources that enabled them to function well. This is consistent with other research reporting on the well-being of nurses during the pandemic. Jarden et al. (2023) found that enablers of nurse well-being included a positive workplace, social connections, and engaging in self-care. The moderate workplace belonging and low turnover intention findings in the current study indicate that staff felt valued by the organisation and did not intend leaving. These may have been enablers for their well-being in the midst of the adversity of the pandemic. The dual continua model of mental health holds that mental illness and well-being are connected but separate, distinct dimensions that can co-exist (Westerhof & Keyes, 2010). Our findings can be understood through this lens as inter-related yet distinct subcomponents within an overarching construct of mental health (Hides et al., 2019).

In respect to resilience and PTG, prior cross-sectional studies investigating the relationship between them have produced mixed results (Tedeschi et al., 2018, p. 70). We did not find any significant association between resilience and PTG, which is consistent with some prior studies on resilience and PTG in wider populations (Adjorlolo et al., 2022; Wilson et al., 2014) and with some studies with MHNs in other contexts (Israeli MHN; Itzhaki et al., 2015). Our findings were not, however, consistent with those of Dahan et al. (2022), who reported a significant positive association between personal resilience (measured with the CD-RISC-10) and PTG with a sample of MHN during the pandemic in Israel. Our findings lend support to the theory that the two constructs are distinct and not related.

In respect to emotional intelligence behaviours (typical emotional functioning and behaviour at work), the mean in this study was significantly lower than previously reported population means (Gignac, 2010). While no direct comparison of means with other MHN studies can be made due to differences in instruments used, Basogul et al. (2019) reported that emotional intelligence (using the Emotional Intelligence Evaluation Scale) of n = 103 Turkish MHNs was moderate. A further study reported that emotional intelligence (measured with Bar-On EQ-i scale) of n = 98 Dutch MHN fell within the average level but was significantly higher than the Dutch population (van Dusseldorp et al., 2011). Our finding was lower than these and has implications for the interpersonal work and emotional labour of MHNs. The ability to be self and other aware, emotionally self-regulate, and manage the emotional responses of others (Palmer et al., 2009), are key abilities for MHNs in their relational work with distressed consumers, and in their interactions with colleagues where there can often be conflict (Delgado et al., 2022). However, as Delgado et al. (2022) also found, when MHNs are in stressful work environments but receive limited supports from organisations, their ability to reflect and regulate their emotions can be impaired. This is a possible explanation for our finding on emotional intelligence behaviours in the context of the COVID pandemic and is consistent with the high levels of psychological distress our sample were also experiencing. These findings indicate that reduction of stressors where possible, and targeted proactive organisational supports for staff well-being and interpersonal practice, are particularly vital in the context of extraordinary workplace stress and challenge.

Sense of workplace belonging was a new variable measured in this population and not previously reported in the MHN literature. We found a higher sense of belonging for inpatient MHN compared to community MHN. Workplace belonging has been associated with higher resilience and psychological well-being (Shakespeare-Finch & Daley, 2017) and has the potential to mitigate job-related psychological distress (Cockshaw & Shochet, 2010; Shakespeare-Finch & Daley, 2017). Our findings may be explained in part by the nature of nurses' roles, where MHNs in inpatient units may feel more embedded in the organisation and work more closely together with other MHNs, while community MHNs work more independently. This finding also has implications for workforce well-being, as we found a lower sense of belonging was associated with higher psychological distress, lower well-being, and higher turnover intention. Increasing the workplace sense of belonging of all nurses, particularly community MHNs, through positive team cultures and manager recognition and support

of staff, is a priority in sustaining the workforce and in workforce retention.

Turnover intention in this study was low compared with those reported by Kelloway et al. (1999) (T1: M = 9.82, SD = 4.50, T2: M = 10.05, SD = 4.54; n = 236 primarily nurses, from Canada). Our sample mean was also lower than that reported by Pang et al. (2023) for a large (n = 6771) sample of South Korean nurses (M = 12.65, SD = 4.37). This result is a positive if somewhat surprising finding given the impact of the COVID-19 pandemic on nurses' work and the high levels of psychological distress of MHN in this study. Turnover intention was higher for ENs than RNs, and higher turnover intent was associated with lower sense of belonging, resilience, and emotional intelligence behaviours. These are a new set of findings in the literature. Kagwe et al. (2019) found that turnover intent for MHN was related to the quality of workplace relationships and opportunities for growth and education. Our findings suggest that strengthening staff's sense of belonging in their teams and offering professional development in emotional intelligence and resilience skills may support lower turnover.

There are several limitations to this study including the sample being from one metropolitan mental health service in Australia. Further limitations with the cross-sectional design are the inability to show cause and effect of key variables over time – reflecting a snapshot in time rather than illustrating causality. As a result, the findings may not be generalizable to other Australian samples or other countries and settings. However, the important findings from this study suggest several areas of future research. Multi-time and multi-setting research is warranted in future, as is the examination of these variables in general nurses and other healthcare professions, including in the international arena.

CONCLUSION

In conclusion, the psychological distress of MHNs in this study was higher than the Australian population and higher than in recent studies of MHNs, most likely due to the impacts of the COVID-19 pandemic. Nevertheless, nearly half the group was flourishing in respect to well-being and turnover intention was relatively low compared with other studies. These findings indicate opportunities to proactively support the MHN workforce and clinical practice in the future.

RELEVANCE TO CLINICAL PRACTICE

To support their mental health and well-being, it is vital that mental health services provide individual and collective well-being strategies and support for MHNs. The work demands placed on MHNs during COVID, in addition to existing and well-known stressors of the work, mean that in this post-pandemic era nurses have ongoing needs in relation to their well-being. The psychological distress experienced during COVID by nurses in this study is likely to have an enduring impact on their mental health and well-being (Frawley et al., 2021) and affect future workforce retention unless it is specifically addressed. Psychological support strategies such as psychological first aid, and Employee Assistance Programs, need to be made available to individual nurses. Active efforts are needed by managers and organisations to strengthen staff's sense of belonging and positive work cultures in teams. Nurses working in community settings may benefit from nurse-specific professional development opportunities and group clinical supervision. Offering professional development and support including resilience interventions to strengthen nurses' psychological well-being, emotional intelligence and resilience skills may support retention and lower turnover.

AUTHOR CONTRIBUTIONS

KF, IS, JS-F, MR, and DM conceived and designed the study; KF and VB collected the data; and MS and KF analysed and interpreted the data. KF drafted the manuscript, and all authors contributed to refining and critically reviewing the manuscript and are in agreement with the manuscript.

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CONFLICT OF INTEREST STATEMENT

Kim Foster is an Editor of the International Journal of Mental Health Nursing. She took no part in the management, reviewer selection, or review outcomes of this paper.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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Appendix 16: Promoting Resilience in Mental Health Nurses: a Partially Clustered Randomised Controlled Trial

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Promoting resilience in mental health nurses: A partially clustered randomised controlled trial

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ABSTRACT

Background: There is a critical global shortage of nurses in mental health, with workforce attrition due in large part to workplace stressors. Proactive strengths-based interventions to strengthen nurses' capacity to manage stress and improve mental health, wellbeing and resilience may also support workforce retention.
Objective: To determine the effects of a resilience-building programme on mental health nurses' coping self-efficacy (primary outcome), and psychological distress, wellbeing, resilience, posttraumatic growth, emotional intelligence behaviours, workplace belonging, and turnover intention (secondary outcomes).
Design: Partially clustered randomised controlled trial.
Setting: Large tertiary metropolitan mental health service in Australia.
Participants: A total of 144 registered and enrolled nurses working clinically ≥0.6 full-time equivalent (73/intervention, 71/control), with 122 completing 3-month follow-up.
Methods: The Promoting Resilience in Nurses programme is an evidence-based workplace intervention delivered by trained facilitators across two workshops. Surveys were administered online upon registration and prior to randomisation (Time 1) into Intervention or Control (no intervention) arms, and immediately after the final workshop (Time 2), and at three months follow-up (Time 3). Linear mixed models for outcome measures were fitted to Time 2 and 3 responses.
Results: There were seven intervention groups, with seven to 13 participants per group. Coping self-efficacy improved at Time 2 (estimated intervention effect 21.2 units, 95 % Confidence Intervals: 13.3 to 29.0) and Time 3 (12.1 units, 4.7 to 19.6), as well as wellbeing (Time 2: 9.2 units, 5.0 to 13.4), resilience (Time 2: 0.24 units, 0.01 to 0.46) and posttraumatic growth (Time 2: 16.1 units, 7.0 to 25.3). Psychological distress reduced (Time 2: −3.7 units, −6.2 to −1.31). All were sustained at three months. Emotional intelligence behaviours were improved (Time 2: 3.5 units, 0.6 to 6.5) but not sustained. Workplace belonging improved at Time 3 (0.34 units, 0.02 to 0.65) only. No statistically significant effects for turnover intention.
Conclusions: Despite major contextual challenges, the Promoting Resilience in Nurses programme achieved the aims of promoting nurses' efficacy to cope with stress and regulate their emotions and improving mental health and wellbeing. The findings support the programme as a feasible and successful intervention for nurses across other settings and contexts.
Trial registration: Australian New Zealand Clinical Trials Registry (ACTRN12620001052921). Registered 15/10/2020. First recruitment 04/02/2021.
Tweetable abstract: Promoting Resilience in Nurses intervention improved coping self-efficacy, wellbeing, resilience, posttraumatic growth, emotional intelligence and psychological distress.

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What is already known

- Workplace stressors can impact nurses' mental health and wellbeing.
- Improving nurses' resilience may help reduce turnover intention and workplace attrition.
- Limited evidence is available for successful interventions to improve mental health nurses' resilience and wellbeing.

What this paper adds

- Mental health nurses' coping self-efficacy, wellbeing, resilience, posttraumatic growth, emotional intelligence behaviours, workplace belonging and psychological distress can be modified by a tailored resilience intervention.
- Improvements in nurses' coping self-efficacy, mental health and wellbeing, resilience and posttraumatic growth can be sustained in the longer term (three months) following a resilience intervention.

1. Background

In the specialist field of mental health, nurses are 44 % of the workforce (International Council of Nurses, 2022). Nursing workforce shortages have long been identified, with the COVID-19 pandemic exacerbating attrition and projected workforce shortfalls (Peters, 2023). Attrition in mental health is related to workplace stressors including poor staffing and skill mix, inadequate support from organisations (e.g., management), high workloads, and unsafe work environments (Delgado et al., 2022; McTiernan and McDonald, 2015). These stressors have substantial psychosocial impacts for nurses including high prevalence of mental health concerns with posttraumatic stress disorder (47 %), anxiety (38 %) and depression (41 %) (Havaei et al., 2021) reported globally, and between one-third and one-half of nurses reporting anxiety and stress across European, Western Pacific and South-East, and Eastern Mediterranean regions (Varghese et al., 2021). The COVID-19 pandemic has added significant disruptions and challenges, including restructuring of care models, managing risk of infection to staff and clients, and trying to maintain therapeutic rapport while using personal protective equipment (Foye et al., 2021; Gao and Tan, 2021; Ward-Miller et al., 2021).

Due to the relational nature of their interpersonal work, mental health nurses require strong cognitive, emotional and relational skills and the ability to self-regulate. They are often exposed to challenging situations in providing interpersonal care to people in mental and emotional distress, and/or with self-harm or suicidal behaviours, as well as managing clinical aggression and interpersonal conflicts (Baby et al., 2014; Cranage and Foster, 2022). Two-thirds of mental health nurses report work-related stressors across consumer/carer, collegial and organisational factors (Foster et al., 2021). The impacts of these acute (e.g., violence) and chronic (e.g., staff shortages) stressors can compromise mental health nurses' wellbeing, and therapeutic practice (Roviralta-Vilella et al., 2019), and lead to burnout (López-López et al., 2019), and job dissatisfaction (Baum and Kagan, 2015), and affect workforce retention (Adams et al., 2021).

Stressors can also impact mental health nurses' own mental health, resulting in lower mental health than population norms (Foster et al., 2021). In Australia, a national cross-sectional survey ($n = 482$) found approximately one in five mental health nurses reported at least moderately severe levels of depression (20 %) and anxiety (19 %) (Delgado et al., 2021). Approximately one in 20 report extremely severe levels of depression and anxiety (Delgado et al., 2021) and between 14 % and 17 % meet posttraumatic stress disorder criteria (Lee et al., 2015). Mental distress, including symptoms of depression, anxiety and stress, has been negatively associated with psychological wellbeing and workplace resilience for mental health nurses (Delgado et al., 2021). Two international reviews have examined mental health nurses' resilience and associations with factors important for their wellbeing and practice (e.g., psychological wellbeing, distress, etc.). These reviews reported low to moderate (Bui et al., 2023) and moderate to high levels of resilience across studies (Foster et al., 2019).

Resilience is a multi-faceted psychological construct that can be understood as the dynamic process of positive adaptation following adversity (McLarnon and Rothstein, 2013), which includes the ability to recover from stress (Smith et al., 2008). As an adaptive process, resilience involves interaction between multiple protective (or resilience-promoting) factors. These include *personal* factors such as coping self-efficacy (a primary resilience-promoting factor), and cognitive and emotional self-regulation and emotional intelligence, as well as *external* factors including social support (McLarnon and Rothstein, 2013; Ye et al., 2022). Resilience is the adaptive process by which an individual's mental health and wellbeing is restored following stress and adversity (McLarnon and Rothstein, 2013). Wellbeing is a complex, multifaceted construct which includes having a purpose in life, experiencing agency, personal growth, and environmental mastery (Ryff, 2013). Coping self-efficacy is a robust and primary resilience-promoting factor and is the perceived ability to be able to deal with issues or barriers when they arise (Schwarzer and Renner, 2000). People with higher coping self-efficacy may experience less stress when faced with difficult or challenging situations (Baluszek et al., 2023; Meyer et al., 2022). Some people can also experience positive psychological growth (posttraumatic growth) and transformation following traumatic or highly challenging circumstances (Tedeschi et al., 2018), which involves cognitive growth and positive behaviours such as an appreciation of life or improved relationships with others (Shakespeare-Finch and Barrington, 2012).

In the context of work, emotional intelligence involves the capacity to recognise and manage self and others' emotional responses (Palmer et al., 2009), and is a key resilience-promoting factor which has been associated with nurses' wellbeing and delivery of patient care (Halter et al., 2017). Further, a sense of workplace belonging (i.e., feeling accepted and valued by those within the workplace) has been associated with nurses' wellbeing (Somoray et al., 2017) and with reduced distress and stronger resilience levels for staff working in potentially traumatic settings (Shakespeare-Finch and Daley, 2017). Evidence indicates that the promotion and enablement of worker resilience is a key strategy to address and diminish the pervasive effects of workplace stress (Shochet et al., 2011). Strengths-based resilience interventions are needed to promote and strengthen mental health nurses' ability to cope with stressors, improve their interpersonal practice, and help improve their mental health, wellbeing and resilience.

There have been increasing reports of resilience interventions in reviews of the wider field of nursing (Delgado et al., 2017; Henshall et al., 2022; Kunzler et al., 2022; Zhai et al., 2021), but few interventions reported in mental health nursing (Foster et al., 2019; Bui et al., 2023). Exceptions are two pilot studies using pre-post designs (Foster et al., 2018a; Henshall et al., 2020) and one pilot randomised controlled trial (Henshall et al., 2023). In the UK, Henshall et al.'s (2020) pre-post study demonstrated statistically significant improvements in forensic nurses' ($n = 29$) self-reported personal resilience and self-confidence following a face-to-face resilience intervention. The authors then conducted a pilot randomised controlled trial of a web-based Resilience Enhancement Online Training for Nurses (Henshall et al., 2023). Although participants ($n = 93$ nurses in community and mental health services) reported sessions as being helpful for their personal wellbeing, resilience, self-confidence, and collegial relationships, there were no statistically significant differences between programme and control groups on resilience or wellbeing scores. In Australia, the Promoting Adult Resilience (PAR) Programme (Liossis et al., 2009; Millear et al., 2008; Shochet et al., 2007) was piloted in a pre-post study with 24 mental health nurses (Foster et al., 2018a). After programme completion, statistical results indicated coping self-efficacy significantly increased, and anxiety significantly decreased, with stress levels significantly lower at

3-month follow-up (all with moderate effect sizes). Participants were highly satisfied with the programme (Foster et al., 2018a) and found it beneficial to help reinforce both their understanding of, and how to strengthen their resilience (Foster et al., 2018b). The PAR programme was then tailored for mental health nurses and the subsequent Promoting Resilience in Nurses (PRiN©) Programme was trialled in the current study.

1.1. Aim

The primary aim was to determine the effects of a resilience-building programme on mental health nurses' coping self-efficacy (primary outcome). The secondary outcomes were psychological distress, psychological wellbeing, resilience, posttraumatic growth, emotional intelligence behaviours, workplace belonging, and turnover intention.

2. Methods

2.1. Research design

A partially clustered randomised controlled trial design was used, meaning that there was clustering of participants in one arm only; that is, the treatment arm. There was no clustering in the control arm. This design allows for comparing the Promoting Resilience in Nurses' intervention participants (clustered by the groups of nurses receiving the programme) to a control group of individual nurses (not clustered) (Li and Hedeker, 2017). As such, this design features clustering within the treatment arm according to programme, and comparison with individuals in the control arm (Lohr et al., 2014). The partially clustered design and corresponding analysis accounts for i) similarities within the intervention arm participants due to the clustering of individuals within group-based intervention delivery (e.g., different facilitators delivering across groups) (Roberts and Roberts, 2005), and ii) control arm participants as individual nurses (not forming groups) and independent from each other.

There were three assessment time points: baseline assessment completed prior to randomisation (T1), assessment immediately after intervention delivery (T2), and 3 months following intervention (T3).

2.2. Modifications to registered trial protocol

The trial was prospectively registered (ACTRN12620001052921) and conducted during the COVID-19 pandemic. The registered trial protocol was modified due to the extenuating circumstances of COVID-19, reported here using CONSERVE-CONSORT guidelines (Orkin et al., 2021). Adherence to State Government policies (e.g., lockdowns) required 1) delays in commencing recruitment into the trial and intervention delivery, and 2) ceasing study recruitment activities for 13 weeks (between 31/08/2021 and 06/12/2021) and intervention delivery for 28 weeks (between 16/07/2021 and 31/01/2022) during the trial period. These changes reduced the data collection period and sample size. The lead investigator ceased trial activities in line with government and health service policies and Human Research Ethics directives, and the team agreed to recommence when appropriate. The decision was not informed by interim data. We subsequently achieved a lower sample size than originally planned. Delivering the programme remotely was not a viable option: an online/e-health programme was not available, and it was too resource-intensive to prepare and implement within the duration of the trial. Further, face-to-face programme delivery is aligned with real-world interpersonal relationships required in the mental health clinical setting. Previous evidence indicated peer group interactions during programme delivery were important for participants' experiences (Foster et al., 2018b). To maintain momentum and recruitment, study information sessions were provided on-line as well as face-to-face. An eligibility criterion for nurses to be working 0.8 was extended to 0.6 full-time equivalent to expand availability to more staff.

2.3. Participants

The study was conducted within a large tertiary metropolitan public mental health service based in Melbourne, Australia, with a population of over 1.5 million people in the catchment area. The overall health service comprised six different service areas or sites (each located in different geographical areas across Melbourne). Each area had its own mental health inpatient and rehabilitation units and community teams, with a total of 11 inpatient or rehabilitation units and 15 community teams across areas, as well as four nursing transition-to-practice programmes across the entire service (i.e. programmes supporting nurses newly transitioning into mental health). There were approximately 695 registered and enrolled nurses working across these teams at study commencement. The trial was conducted during the COVID-19 pandemic and during this period the health service also commenced structural disaggregation, where several areas began splitting off from the overall health service and staff began moving to other jobs. Eligibility criteria for participants were enrolled or registered nurses working clinically at the service at least 0.6 full-time equivalent. Nurses who had participated in the pilot study of the PAR programme were excluded.

2.4. Sample size

Sample size and power had been calculated taking account of the design (Li and Hedeker, 2017), with inputs based on pilot data (Foster et al., 2018a) and the primary outcome of coping self-efficacy at 3-month follow-up. Within-arm standard deviations (SDs) of 40 (intervention) and 36 (control) were used, and a difference in means of 16 units (Cohen's effect size ≈ 0.42) was taken for the minimum difference of interest. Assuming an intraclass correlation of 0.1, alpha = 0.05 and a two-sided test, the power, given by formula 4.1 in Li and Hedeker (2017), is 80%. To allow for attrition of up to 20%, we had planned a target sample size of 360: 180 in the treatment arm (i.e. 12 groups of 15 participants in each program) and 180 in the control arm. The original sample size calculation was based on the standard (26-item) coping self-efficacy scale (CSES; Chesney et al., 2006). To reduce participant burden, the trial used the short form (13-item) version of the CSES, for which it is reasonable to reduce both the SDs and difference in mean of interest by 50%, leading to the same required sample size. The final sample size ($n = 144$) achieved in this trial was less than planned due to the impacts of the COVID-19 pandemic.

2.5. Recruitment

Recruitment took place between 4th February 2021 and 23rd March 2022. Staff within each area/transition programme were approached separately for recruitment, with registered and enrolled nurses working in clinical roles invited to attend online or in-person study information sessions delivered by the research team. The researchers then sent an email to the unit/team leaders to be distributed to their nurses in their teams, which provided the participant information sheet and study registration link (REDCap). Interested nurses completed the eligibility survey, and if eligible, completed the Time 1 (T1) survey prior to randomisation. Informed consent was provided by completing the survey. Follow-up surveys were completed immediately after intervention (T2) and between 28/07/2021 and 31/08/2022 (T3). Participants received $30 vouchers for their time on completion of all surveys.

2.6. Randomisation

To manage recruitment from each area or transition programme at a time, an expert independent of the research team developed a block randomisation algorithm based on nursing staff numbers per unit/team. After T1 survey completion, when there were sufficient numbers for allocation to a PRiN programme (e.g., minimum $n = 7$), participants were randomly allocated to either intervention or control group by research

assistants using an automated computer-generated randomisation function. A group size of either 1 or 2 (randomly selected) was used for teams of fewer than 20 members, with the goal of equal assignment within blocks as a ratio 1:1. Investigators were blinded to participant and group identity during the trial. Participants, research assistants (who provided programme details to intervention participants), and analysts (who were required to statistically account for the clustering within the intervention arm) were not blinded to identity or group allocation. The intervention was offered to control group participants at the conclusion of the trial.

2.7. Intervention - Promoting Resilience in Nurses© programme

Following the successful pilot (Foster et al., 2018b), the Promoting Adult Resilience (PAR) programme (Liossis et al., 2009; Millear et al., 2008; Shochet et al., 2007) was tailored by mental health nursing experts in conjunction with the programme developers. The resulting Promoting Resilience in Nurses© programme is a strengths-based programme underpinned by interpersonal theory, cognitive behaviour theory and posttraumatic growth theory. The programme targets key resilience-promoting factors and outcomes, with the aims to promote self-efficacy to cope with stress, increase the mental health and wellbeing of adults in the workplace; promote stress management skills; promote resilience; improve relationships and decrease conflict by increasing interpersonal and communication skills; increase ability to manage and regulate emotions in times of stress and adversity; and promote capacity for posttraumatic growth. There are six modules: identifying strengths and understanding resilience; understanding and managing stress; challenging and changing negative self-talk; drawing strength from adversity; promoting positive relationships and managing conflict; and creating solutions for wellbeing. In tailoring of the programme, modules were adapted so activities and audio-visual materials were relevant in wording and focus for mental health nurses' practice and contexts.

Participants attend two 1-day workshops, delivered three weeks apart, and receive booster activities. Workshops were delivered face-to-face by two trained facilitators (experienced senior mental health nurses) in a peer-group setting. Facilitators were trained and accredited in programme delivery by the programme developers prior to study commencement. The programme is manualised, using various teaching modalities including video clips, didactic sessions, small and large group discussions, and individual activities. Participants receive 'booster' activities via Short Message Service weekly between the two workshop days, and each week for three weeks following the second workshop. These activities take approximately 10 min to complete. For example, participants received a reminder to use thought challenges to change negative self-talk. Delivery of the intervention comprised 23 individual content units across the six modules. Fidelity checklists were completed by facilitators for each programme, with each content unit assessed as 1) Yes, delivered in full, 2) Yes, delivered in part, or 3) No.

2.8. Outcome measures

The T1 survey included participant demographic information: age-group, gender, role (registered or enrolled nurse), years of experience in mental health and in nursing, and 88 items from the following well-established, valid and reliable measures:

Coping self-efficacy (primary outcome) was measured with the 13-item Coping Self-Efficacy scale (Short; CSES) assessing a person's perceived ability to cope effectively with life challenges (Chesney et al., 2006). Item stem is "When things aren't going well for you, how confident are you that you can …" with item including "… find solutions to your most difficult problems" and "…stop yourself from being upset by unpleasant thoughts". The range of values is 0 (cannot do at all) to 10 (certain can do), where higher scores reflect higher levels of self-efficacy with using positive coping strategies. The Cronbach's alpha in this study was 0.93.

Psychological distress was measured using the 10-item Kessler Psychological Distress Scale (K10) (Andrews and Slade, 2001), assessing non-specific psychological distress based on anxiety and depressive symptoms. Participants rate frequency of feelings in the past 30 days from 'all of the time' (value of 1) to 'none of the time' (value of 5). Participants scoring between 10 to 15, 16 to 21, 22 to 29 and 30 to 50 are considered to have low, moderate, high, and very high psychological distress respectively. Items included feeling "… tired out for no good reason" and "… restless or fidgety". The Cronbach's alpha in this study was 0.88.

Wellbeing was measured with the 14-item short form of the Mental Health Continuum (MHC-SF), which assesses mental health and psychological, social, and emotional wellbeing (Keyes et al., 2008). This scale has three subscales: emotional (3 items), social (5 items), and psychological (6 items) wellbeing with items including "satisfied with life", "that people are basically good" and "that your life has a sense of direction or meaning to it". Participants rate frequency of feelings in the past month from 0 (never) to 5 (every day). Participants are categorised as flourishing if they report 'everyday' or 'almost every day' to one of the emotional wellbeing items, and at least six of the remaining items (Keyes et al., 2008). The Cronbach's alpha in this study was 0.92.

Resilience was measured with the 6-item Brief Resilience Scale (BRS) (Smith et al., 2008), which assesses resilience as recovery from stress and coping with stressors. Each item is rated from strongly disagree (value of 1) to strongly agree (value of 5). A total score of 3.70 means moderate (or 'average') resilience, scores below 3.00 mean low and scores above 4.30 mean high. Items include "I tend to bounce back quickly after hard times" and "It is hard for me to snap back when something bad happened". The Cronbach's alpha in this study was 0.84.

Posttraumatic growth was measured using the 21-item Posttraumatic Growth Inventory (PTGI) (Tedeschi and Calhoun, 1996) to quantify positive changes following highly stressful events, including personal strength, new possibilities, relating to others, appreciation of life, and spiritual change. Participants indicate whether they have experienced a traumatic event and briefly describe the event, including when it occurred and the perceived severity of trauma ranging from 1 = moderate to 4 = very severe, and rate impacts of the event from 'not at all' (value of 0) to 'very great degree' (value of 5). Higher scores suggest greater posttraumatic growth. Items include "I established a new path for my life", "I discovered that I'm stronger than I thought I was", and "I have more compassion for others". The Cronbach's alpha in this study was 0.94.

Emotional intelligence behaviours were measured using the 14-item Genos Emotional Intelligence Inventory – Short (GENOS-EI) (Palmer et al., 2009). The measure reflects typical emotional functioning and behaviour at work through self-awareness, emotional expression, emotional awareness of others, emotional reasoning, emotional self-management, emotional management of others, and emotional self-control, and therefore assesses enacted rather than latent emotional intelligence. Frequency of items is rated from 'almost never' (value of 1) to 'almost always' (value of 5), and higher scores reflect higher emotional functioning. Items include "I appropriately communicate decisions to stakeholders" and "When upset at work, I still think clearly". The Cronbach's alpha in this study was 0.83.

Workplace belonging was measured by the 6-item Sense of Belonging subscale from the Psychological Sense of Organizational Membership Scale (PSOM) (Cockshaw and Shochet, 2010). The subscale indicates how people feel at work with items measuring feelings of being accepted, valued, and needed by an organisation. Participants indicate how true statements are for them: ranging from 1 (not at all true) to 5 (completely true), with higher total scores reflecting stronger sense of belonging. Items include "People here notice when I'm good at something" and "I am included in lots of activities at this organization". The Cronbach's alpha in this study was 0.87.

Turnover intention was measured using the 4-item Turnover Intention Scale (TIS) (Kelloway et al., 1999), with items covering thoughts

about leaving the current organisation and seeking job opportunities. Participants indicate agreement with items ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores suggesting greater turnover intention. The Cronbach's alpha in this study was 0.90.

2.9. Statistical analysis

A linear mixed model was fitted to each outcome measure (i.e., 8 models conducted) at Time 2 (T2) and Time 3 (T3). Each model included fixed effect explanatory variables of T1 treatment arm (intervention or control) and random effects of programme delivery group (applicable in the intervention arm only) and participant. This approach allows for individual data to be used while accounting for the clustering within the intervention arm groups, and the repeated measures on participants. Including the T1 measure allows a statistically efficient estimation of the intervention effect (rather than calculating raw score differences between time points). Intra-cluster correlations were estimated for each model, using complete case analyses. These were 0.044 for PSOM, 0.001 for CSES and zero for the other outcomes, indicating that cluster effects were generally minimal.

There were missing data for a number of variables, either because participants did not provide any data at a given time point, or because they omitted responses to particular questions. The extent of missing data ranged from 0 % (all present) for several variables, up to 37.5 % missing for PTGI at T2. Missing data were handled using multiple imputation (Sterne et al., 2009), preserving intention to treat. The variables used in the multiple imputation models were age, gender (female or not), number of years in mental health nursing, and each outcome measure at T1, T2 and T3: specifically, coping self-efficacy, psychological distress, wellbeing, resilience, posttraumatic growth, emotional intelligence behaviours, workplace belonging, and turnover intention; 27 variables in total. The multiple imputation process was carried out separately for the intervention and control groups, using predicted mean matching (Morris et al., 2014); the intervention group required multilevel predicted mean matching due to the clustering in groups. The number of imputed datasets was 100. For each of these 100 datasets and each of the eight outcomes separately, the linear mixed model described in the methods was applied, and inferences were then obtained using Rubin's rules. For reference and comparison, completed case analyses were also carried out.

Treatment estimates (intervention minus control) and associated 95 % confidence intervals and p-values are reported for all outcome measures at T2 and T3. Analyses were carried out using R version 4.3.0 (R Core Team, 2023) and several R packages, including "mice" for multiple imputation (van Buuren and Groothuis-Oudshoorn, 2011) and "lme4" for the linear mixed model (Bates et al., 2015).

2.10. Ethics

Ethical approval was granted by Melbourne Health Human Research Ethics Committee (HREC/56912/MH-2020) and Australian Catholic University Human Research Ethics Committee (2020-127RC), including consent implied by survey completion. The trial was registered on the Australian and New Zealand Clinical Trials Registry (registration number: ACTRN12620001052921) on 15th October 2020, with first recruitment on 4th February 2021.

3. Results

3.1. Participants

The participant flowchart is presented in Fig. 1. A total of 144 mental health nurses completed the T1 survey and were randomised to the intervention ($n = 73$) or control ($n = 71$) group. Participant demographics and baseline (T1) characteristics by intervention and control groups are presented in Table 1. Twelve participants from the intervention group withdrew during the study, and 10 ($n = 8$ intervention, $n = 2$ control) were lost to follow-up, resulting in a final study sample of 122 participants. The Promoting Resilience in Nurses programme was delivered to a total of seven groups, with group size varying from seven to thirteen.

3.2. Intervention outcomes

For each outcome, Table 2 shows the estimate and 95 % Confidence Intervals. The size of the intervention effect needs to be interpreted in the context of the units and scale of the outcome.

The estimated treatment effect (intervention minus control) for coping self-efficacy was 21.2 units at T2 (95% CI: 13.3 to 29.0, $p < 0.001$) and 12.1 units at T3 (95% CI: 4.7 to 19.6, $p = 0.002$). To interpret this result, the short version CSES scale has 13 items, each scored 0 to 10. These improvements therefore correspond to 1.6 points (T2) and 1.0 point (T3) per question on average. These are substantial effects.

The estimated intervention effects are large and important, favouring intervention, for psychological distress, wellbeing, resilience, posttraumatic growth at both T2 and T3; Emotional intelligence behaviour was statistically significant at T2 only and workplace belonging statistically significant at T3. Generally, the T3 estimates tended to be slightly smaller than the T2 estimates, with psychological distress, resilience and workplace belonging sustained over time (see Table 2). Turnover intention did not show a statistically significant effect at either time point.

3.3. Complete case analysis

The complete case results were not very different from the multiple imputation results, generally, taking into account the precision of estimates (Supplemental material Table 1). Notably, the complete case treatment effects for the primary outcome CSES were 20.9 (T2) and 12.2 (T3), almost the same as the multiple imputation results.

3.4. Programme fidelity

Fidelity checklists indicated programme delivery as follows: of the 161 content units delivered (i.e., 23 content units in the programme delivered to seven groups), 153 units (95 %) were fully delivered, 7 units (4.4 %) were partially delivered, and 1 unit (0.6 %) was not delivered.

4. Discussion

This study presents the first randomised control trial evaluation of a resilience intervention with mental health nurses that demonstrates statistically significant and clinically meaningful results. Key findings were that coping self-efficacy (primary outcome) improved after the programme, with improvements sustained for three months. Psychological distress decreased, while wellbeing, resilience, posttraumatic growth improved and were sustained at 3 months. Emotional intelligence behaviours improved initially (T2) and workplace belonging improved at 3-month follow-up. Overall, this trial indicates the Promoting Resilience in Nursing programme was effective in achieving programme aims of promoting self-efficacy to cope with stress, increasing mental health nurses' mental health, wellbeing and resilience, promoting post-traumatic growth, and regulating emotions in the context of stress and adversity. The programme also promoted a sense of workplace belonging. These are notable findings in the context of the extraordinary challenges to staff that occurred during the trial due to the COVID-19 pandemic and extended lockdowns in Melbourne, combined with the structural disaggregation of the health service. These went beyond the everyday stressors of their work. As Kunzler et al. (2022) identify in their review and meta-analysis of resilience interventions with nurses prior to COVID-19, pre-pandemic interventions may not be impactful during public health crises, and the findings from resilience

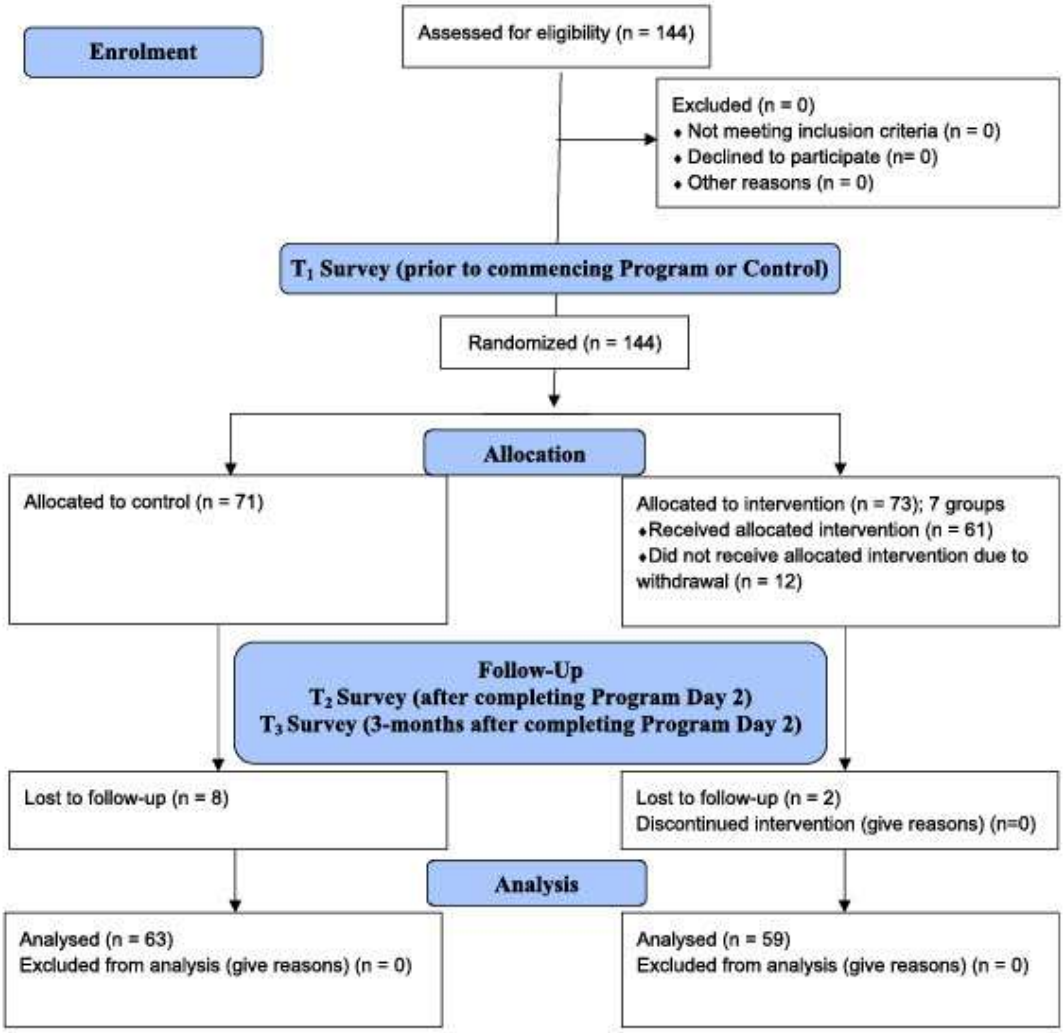

Fig. 1. CONSORT 2010 flow diagram.
Note: Lost to follow-up are participants who completed Time 1 survey but did not complete both Time 2 and Time 3 surveys. Analysis numbers for complete cases' analysis.

interventions such as this that were implemented during COVID-19 provide vital further insights into the efficacy of these interventions.

The statistically significant improvement in coping self-efficacy (primary outcome) in the programme group is consistent with the pilot results of the antecedent Promoting Adult Resilience programme with mental health nurses (Foster et al., 2018a) and with some other trials in the wider nursing field (Kunzler et al., 2022) that have reported improved self-efficacy at 3-month follow-up (Berger and Gelkopf, 2011; Bernburg et al., 2019). Having a personal belief in their ability to deal with challenging circumstances is an important resilience-promoting factor for mental health nurses' wellbeing and to support their interpersonal practice.

We also found statistically significant reductions in mental distress (using the K10), sustained at 3 months. This is a key finding. There are no direct comparisons to be made as other nursing studies have used different measures for mental distress (e.g., DASS-21) but Kunzler et al. (2022) in their review and meta-analysis found no effect of resilience interventions on depressive symptoms at post-test or within 3 months, and no effect on anxiety or stress at post-test, but moderate effects for both within 3 months. Our findings showed substantial benefits and were statistically significant over both time points and have important implications in respect to the benefits the Promoting Resilience in Nurses programme can have on reducing mental distress for nurses. Prior studies have reported the poor mental health of mental health nurses (Foster et al., 2021; Delgado et al., 2021) and mental distress is a known factor in nursing workforce attrition and reduced quality of practice (Adams et al., 2021; Chew et al., 2023; Cranage and Foster, 2022; Foster et al., 2024a).

Wellbeing was a further statistically significant finding sustained at 3 months, which is generally consistent with Kunzler et al.'s (2022) meta-analysis that illustrated a moderate effect post-intervention and small effect for wellbeing at 3 months across studies. Our findings do contrast with Henshall et al.'s (2023) trial, which did not demonstrate statistically significant differences in wellbeing (Warwick Edinburgh Wellbeing Scale) between intervention and control groups at 6 weeks. Positive wellbeing is a key outcome indicating a resilient process (McLarnon and Rothstein, 2013) and a valuable finding for nurses as the absence of mental distress is not necessarily an indicator of positive mental health (Westerhof and Keyes, 2010). In this study, there was both reduction of distress and improvement in mental health as indicated by the wellbeing results. There was also statistically significant improvement in emotional intelligence behaviours post intervention, which was not sustained at 3 months (although completed case analysis indicated statistically significant improvement at 3 months). Exploring

Table 1
Demographic characteristics by cluster and individual, and baseline (Time 1) scores for primary and secondary outcomes

Demographic characteristics	Intervention, $n = 73$ $n = 7$ groups/clusters	Control, $n = 71$ No clusters
Cluster	Mean (SD)	Mean (SD)
Number per cluster	10.43 (2.57)	N/A
Age (years)	35.42 (4.97)	N/A
Years mental health nursing	6.16 (5.99)	N/A
Individual	n (%)	n (%)
Gender		
Male	19 (26 %)	20 (28 %)
Female	54 (74 %)	50 (70 %)
Non-binary	0 (0 %)	1 (1.4 %)
Age group (years)		
20 to 29	25 (37 %)	17 (25 %)
30 to 39	22 (32 %)	26 (39 %)
40 to 49	13 (19 %)	9 (13 %)
50 +	8 (12 %)	15 (22 %)
Unknown	5	4
Professional role		
Enrolled nurse	7 (9.6 %)	12 (17 %)
Registered nurse (RN)	66 (90 %)	59 (83 %)
Years in mental health nursing		
<1	22 (31 %)	18 (27 %)
1 to 5	29 (41 %)	30 (45 %)
6 to 10	9 (13 %)	7 (10 %)
11 to 20	5 (7 %)	9 (13 %)
>20	5 (7 %)	3 (5 %)
Unknown	3	4
For RNs ($n = 125$), post-graduate qualification in mental health		
Yes	33 (50 %)	28 (47 %)
No	33 (50 %)	31 (53 %)
Baseline measure	Mean (SD)	Mean (SD)
Coping self-efficacy[a]	82.3 (20.4)	82.1 (21.6)
Psychological distress	20.3 (6.7)	20.1 (6.1)
Wellbeing	46.7 (12.4)	49.3 (12.0)
Resilience	3.37 (0.66)	3.54 (0.74)
Posttraumatic growth	62.4 (20.8)	59.7 (21.9)
Emotional regulation	53.9 (6.9)	53.9 (6.7)
Workplace belonging	3.61 (0.80)	3.55 (0.83)
Turnover intention	7.6 (3.5)	8.3 (3.9)

Note: Time 1, baseline; measures completed prior to randomisation to intervention or control group. SD, standard deviation.
[a] Coping self-efficacy primary outcome. Missing data for baseline measures varied between 0 and 2, except for Posttraumatic Growth: $n = 23$ (intervention) and $n = 21$ (control).

the impact of the Promoting Resilience in Nurses programme on mental health nurses' emotional intelligence behaviours at work using the GENOS-EI measure was novel and there are no prior reports using this measure with mental health nurses. Of the nine strongest resilience interventions for nurses identified by Kunzler et al. (2022), it is relevant to note that emotion regulation strategies were delivered in five. Emotional intelligence is positively associated with mental health (Ruiz-Aranda et al., 2012) and wellbeing (Sánchez-Álvarez et al., 2015) and is a key aspect of resilience (Foster and Robinson, 2014). Having the capacity to emotionally regulate is also recognised as a contributing factor in nurses' ability to manage stressors (Halter et al., 2017). Emotional intelligence behaviours are essential capacities that mental health nurses draw on in their interpersonal practice when engaging with distressed others (e.g., consumers and carers). In respect to future intervention research, we recommend that emotional intelligence measures are included with this workforce.

Resilience demonstrated statistically significant improvements over both time points, with a larger effect at 3-month follow-up than immediately after the intervention. This is a new finding and the first trial to demonstrate sustained improvement in mental health nurses' resilience

Table 2
Estimates and 95 % confidence intervals for outcomes, expressed as intervention minus control.

Primary and secondary outcomes	Time 2 (N = 144, after the programme)		Time 3 (N = 144, 3 months after programme)	
	Estimate and 95 % CIs	P	Estimate and 95 % CIs	P
Coping self-efficacy[a]	21.2 (13.3 to 29.0)	<0.0001	12.1 (4.7 to 19.6)	0.002
Psychological distress[b]	−3.7 (−6.2 to −1.3)	0.004	−4.2 (−6.7 to −1.8)	0.001
Wellbeing	9.2 (5.0 to 13.4)	0.0001	7.6 (3.7 to 11.4)	0.0003
Resilience	0.24 (0.01 to 0.46)	0.040	0.30 (0.08 to 0.52)	0.009
Posttraumatic growth	16.1 (7.0 to 25.3)	0.001	8.9 (0.6 to 17.2)	0.035
Emotional intelligence behaviours	3.5 (0.6 to 6.5)	0.020	2.3 (−0.4 to 5.0)	0.093
Workplace belonging	0.25 (−0.07 to 0.58)	0.119	0.34 (0.02 to 0.65)	0.036
Turnover intention[b]	−0.65 (−2.22 to 0.91)	0.406	0.17 (−1.36 to 1.71)	0.822

Notes: Results for multiple imputation analysis. Table for complete cases analysis in Supplemental.
[a] Primary outcome.
[b] For psychological distress (K10) and turnover intention (TIS), higher values indicate lower wellbeing and lower retention, hence negative estimates favour intervention.

following a resilience intervention. Kunzler et al.'s (2022) meta-analysis found that post-intervention effects for resilience were not sustained over time across studies (≤3-months). Henshall et al.'s (2020) pilot study showed statistically significant improvement in nurses' resilience post-intervention using a single item "How would you rate your current level of resilience?", but not with the Brief Resilience Scale (BRS also used in the current study) at 6-weeks in their pilot trial (Henshall et al., 2023). In the Promoting Adult Resilience pilot (Foster et al., 2018a), the 60 item Workplace Resilience Inventory was used, which identified statistically non-significant but clinically meaningful improvements in behavioural and cognitive self-regulation post intervention.

There were also sustained improvements in post-traumatic growth 3 months following the intervention. This is another substantial and meaningful finding, particularly given the context of the trial being conducted during the pandemic, which has been recognised as a traumatic event with increased potential for mental distress (Kaubisch et al., 2022). Although there are no direct comparisons to be made with intervention studies with this population, these findings are generally consistent with those of Wang et al. (2023) in their meta-analysis of post-traumatic growth, who found nurses on the COVID frontline had the highest levels of PTG, followed by mental health nurses.

The Promoting Resilience in Nursing programme did not significantly influence work-related outcomes of workplace belonging directly after the intervention (although statistically significant improvement was identified at both time points in the completed case analysis), and no improvements were identified for turnover intention. It is relevant to note that turnover intention overall was low at T1 (Foster et al., 2024b). Despite the trial being conducted during a period of substantial change and trauma affecting nurses (COVID-19 pandemic and structural disaggregation), the improvement in workplace belonging at 3-month follow-up is notable. Both COVID-19 and disaggregation are highly likely to have affected nurses' sense of belonging to their workplace, and their intention to leave. Internationally, turnover rates of nurses increased during the COVID-19 pandemic, and low job control, higher workload and longer hours, and job stress and job insecurity were associated with higher turnover (Tolksdorf et al., 2022). Previous research has also identified that hospital system changes such as restructures can be detrimental to nurses' wellbeing (Lee et al., 2015), and are associated with increased nursing workload and stress levels, and decreased job satisfaction and professional efficacy (Greenglass and Burke, 2001). Exploring the relationships between nurses' mental health and wellbeing, emotional regulation, and workplace belonging and turnover intention is outside the scope of this trial. For future research, such relationships could identify potential moderator effects of individual (e.g., age, gender) or professional (e.g., years of experience) factors on these work-related outcomes.

In summary, the trial results indicate that the programme was effective in achieving its stated aims, and it is likely that turnover intention was affected by the impacts of the COVID-19 pandemic and structural disaggregation in the health service. The current setting was public mental health, but the Promoting Resilience in Nurses programme could be suitable for the wider nursing and health practitioner workforces with some minor modifications. It is recommended that future health service policy includes resilience interventions being provided for transition programmes for graduates and other nurses newly transitioning into mental health, and for nurses assuming clinical leadership roles or managers, who can often be left out of professional development opportunities. We also recommend that supporting staff wellbeing through resilience programmes is important for future organisational change. In respect to health service policy, when hospitals are restructuring, for example, we recommend that additional support is required for nurses (Lee et al., 2015). In respect to practice and research, further trials of the Promoting Resilience in Nurses programme and its efficacy in other contexts would help extend the evidence-base through longer term follow-up (e.g., at 6 and 9 months) (as per Kunzler et al.'s, 2022 recommendation). The programme could include refresher or booster sessions to reinforce nurses' skills at 6 months. These refreshers could be facilitated online given the acceptability and feasibility of some other online resilience strategies (Henshall et al., 2023). Future research could also consider the potential cost-effectiveness of delivering the programme (e.g., reduced absenteeism or turnover) and potential moderator effects (e.g., years of clinical experience).

4.1. Limitations

Despite the strengths of the study, including the randomised control trial design, and the evidence-based intervention tailored specifically for mental health nursing, there are some limitations to be considered. Due to government lockdowns for COVID-19, the data collection period was affected which limited the sample size. Nevertheless, the benefits from the programme for the primary outcome measure were substantial and greater than those expected in the design phase. The sample comprised mental health nurses in one public mental health setting, and the findings may not necessarily be generalisable to other settings. Participation was voluntary, and subject to self-selection bias. Those nurses experiencing high stress levels or who were interested in improving their resilience within the stressful circumstances may have been more likely to participate. A substantial proportion of data were missing for the posttraumatic growth inventory, which may have been due to being the last measure in the survey. The follow-up timeline was also relatively limited and subsequent research on the maintenance of the positive effects over a longer period of time is needed.

5. Conclusion

The current study is the first to demonstrate that the Promoting Resilience in Nurses programme can help improve mental health, wellbeing and resilience, and increase efficacy to manage stress, regulate emotions and experience posttraumatic growth in the context of adversity for mental health nurses. These capacities are critical for nurses' wellbeing and have implications for effective clinical practice in delivering healthcare within complex, demanding environments. This intervention was found to be appropriate for mental health nurses and could be tailored for other nursing and healthcare workforce populations as needed. At a time when attrition of the nursing workforce is projected to grow, evidence-based strategies to offset work-related stressors and support staff wellbeing are needed.

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CRediT authorship contribution statement

Kim Foster: Writing – original draft, Visualization, Resources, Project administration, Methodology, Investigation, Funding acquisition, Conceptualization. **Ian Shochet:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Jane Shakespeare-Finch:** Writing – review & editing, Funding acquisition, Conceptualization. **Darryl Maybery:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Minh Viet Bui:** Writing – review & editing, Project administration, Investigation, Data curation. **Ian Gordon:** Writing – original draft, Formal analysis. **Kathleen L. Bagot:** Writing – original

draft. **Michael Roche:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization.

Data availability

The raw data supporting the conclusions of this article will be made available by the authors upon reasonable request. All publications from the research will be openly accessible. For those interested in further details about the Promoting Resilience in Nursing (PRiN)© programme, please contact Prof Ian Shochet, i.shochet@qut.edu.au

Declaration of Competing Interest

The Institutes of authors KF, IS, JSF, DM and MR received funding as outlined in Funding. Funding bodies had no role in the design, conduct or write-up of the trial. IS and JSF are the programme developers and were involved in study conception, design and conduct but had no role in the trial analysis. MVB, IG, and KB declare no competing interests.

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