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Using a co-design methodological approach to optimize perioperative nursing care for older adult patients from ethnically diverse backgrounds: a study protocol

Charmaine G. Bonus[a,b], Deborah Hatcher[a], Tiffany Northall[a] and Jed Montayre[a,c,d]

[a]School of Nursing and Midwifery, Western Sydney University, Penrith, NSW, Australia; [b]School of Nursing, Midwifery and Paramedicine, Australian Catholic University, Blacktown, NSW, Australia; [c]School of Nursing, The Hong Kong Polytechnic University, Hung Hom, Hong Kong, SAR; [d]WHO Collaborating Centre for Community Health Services, The Hong Kong Polytechnic University, Hung Hom, Hong Kong, SAR

ABSTRACT
This article outlines the use of a co-design methodological approach aimed at optimizing perioperative care experiences for ethnically diverse older adults and their family carers. The research involved three phases. In Phase 1, the foundation was established with the formation of a Core Advisory Group comprising key informants, including health consumers. This initial phase focused on forming relationships and conducting a literature review to inform subsequent stages of the research. Phase 2 progressed to data collection, where a qualitative survey on perioperative experiences was conducted. Semi-structured interviews were held with patients, their family carers, and perioperative staff. Phase 3 advanced the co-design process through a workshop involving patients, family carers, perioperative staff, and key stakeholders. Workshop participants collaborated on potential practice changes, proposing strategies for future clinical implementation. While data analysis and reporting for Phases 2 and 3 are forthcoming, the continued involvement of the Core Advisory Group ensures ongoing consensus-building on health consumer needs. This methodology article adopts a prospective stance, with findings to be presented in subsequent scholarly works. Use of this methodology will help to determine how the use of a co-design approach may impact the development of culturally responsive perioperative nursing care for those from ethnically diverse communities.

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1. Introduction

As the global population increases, so do the total number of international migrants (World Health Organization [WHO], 2022). The Australian 2021 Census showed that 27.6% of the population reported a birthplace overseas, and almost half of Australians have a parent born overseas (48.2%) (Australian Bureau of Statistics [ABS], 2022a, 2022b). Of the approximately 3.7 million Australians aged 65 and over, 1 in 3 were born overseas, with the majority born in a country where English is not the main language (Australian Institute of Health and Welfare [AIHW], 2021). Around 5.2% of overseas-born older Australians reported living in a multi-family household in 2016 compared with 1.9% of those born in Australia. This suggests that intergenerational living may be more common for older people from ethnically diverse backgrounds (Australian Institute of Health and Welfare [AIHW], 2021), indicating the role that family carers have in these family units.

Older Australians over the age of 65 are increasingly admitted to hospital for acute care reasons, which include surgical procedures (Australian Institute of Health and Welfare [AIHW], 2016). Age-related physical decline and chronic conditions that are more common in advanced age lead to increased utilization of health care services among older adults. Due to these changes, older adults are at increased risk of morbidity, mortality, and functional decline after surgery (Brinson et al., 2016).

A literature review by Bonus et al. (2022) found that there are unique perioperative needs for patients from different ethnic groups, which are informed by their culture, ethnicity and language. These perioperative needs are not necessarily exclusive to those of ethnically diverse backgrounds. For example, there is a need for understandable information to make an informed decision, and would be considered as an essential aspect of perioperative care for any patient. However, the need for understandable information and the complexities of effective communication in

CONTACT Charmaine G. Bonus Charmaine.Bonus@acu.edu.au School of Nursing, Midwifery and Paramedicine, Blacktown c/o Australian Catholic University, Level 5, 22 Main Street, Blacktown, NSW 2148 Australia

perioperative settings are compounded by nuances of culture and language, as experienced by those from ethnically diverse backgrounds. This, along with the growing population of older adults from ethnically diverse groups, underscores the significance of research on culturally responsive nursing care for older adults and their family carers during the perioperative experience. There is a need for co-design methodological approaches in tackling such nursing practice issues and there is a dearth of literature on this specific combination of topics.

The authors of this article present a comprehensive, co-design methodological approach aimed at optimizing perioperative care experiences for ethnically diverse older adults and their family carers. The study unfolds across three distinct phases. Phase 1, which involved the formation of a Core Advisory Group and a thorough literature review, has been completed. Phase 2 encompassed data collection through qualitative surveys and interviews, while Phase 3 advanced through a collaborative workshop to propose future practice changes. Data analysis and reporting for Phases 2 and 3 are forthcoming. This article presents the completed phases of the study and will outline the methodologies and theoretical frameworks employed, while also elucidating the direction for the forthcoming analyses and reporting.

1.1. Aims and research questions

The aim of this study protocol article is to outline the co-design methodological approach used to optimize perioperative care experiences for ethnically diverse older adults and their family carers.

The use of a co-design approach will allow for the following two research questions to be answered:

(1) "What are the experiences and unique needs of ethnically diverse older adults and their family carers during the perioperative experience?"; and
(2) "How does a co-design approach impact the development of culturally-responsive perioperative services for ethnic community groups?"

2. Background

2.1. Optimising the perioperative care experience

Perioperative care is "the multidisciplinary, individualised, integrated care of patients, from the moment surgery is contemplated through to their optimal outcome" (The Australian and New Zealand College of Anaesthetists [ANZCA], 2021, p. 5). An effective perioperative care process prepares the patient, family and carer for the whole surgical journey (Agency for Clinical Innovation [ACI], 2018). One of the main functions of a perioperative service is to ensure that the patient is prepared for their complete surgical journey, and that this occurs in a safe, efficient and patient-centred manner (ACI, 2018).

All patients undergoing a day surgical procedure are provided with verbal and written information on how to aid recovery at home. The role family carers have upon discharge from a day surgical procedure to home is documented to involve provision of care and assistance, advocating, enacting vigilance during relative recovery at home, being a source of comfort, and acting as a translator (Hahn-Goldberg et al., 2018). Consequently, patients and/or their carers need to be able to read and understand health instructions on how to manage recovery in the home setting (Hälleberg Nyman et al., 2018).

It is important that perioperative care is delivered in culturally safe and competent ways (Ayanian, 2008; Eguia et al., 2018; Girotti et al., 2014; Haider et al., 2013). Patients of ethnically diverse backgrounds are more likely to experience surgical disparities such as postoperative complications and subsequent readmissions (Ayanian, 2008; Eguia et al., 2018; Girotti et al., 2014; Schoenfeld et al., 2014). To overcome such existing health disparities for those from ethnically diverse populations, perioperative services need to work in partnership with health consumers. Specifically partnering with health consumers who are from ethnically diverse backgrounds to tailor care and as a result, work to achieve optimal perioperative health outcomes.

According to the Australian Commission on Safety and Quality in Health Care [ACSQHC] (2021, p. 75), a health care consumer is *"a person who has used, or may potentially use, health services, or is a carer for a patient using health services. A healthcare consumer may also act as a consumer representative to provide a consumer perspective, (and) contribute consumer experiences…"*. Partnering with health consumers should include a demonstrated commitment to ensure that assessment, planning, referral and follow up processes are tailored to the individual (Agency for Clinical Innovation [ACI], 2018). Broadly speaking, co-design is an approach that attempts to actively involve all stakeholders (e.g., employees, patients, carers) in the design process, so as to help ensure the service meets the end-user's needs (Robert et al., 2015).

3. Design

3.1. Theoretical framework

This article outlines use of a co-design methodological approach used to optimize perioperative care experiences for ethnically diverse older adults and their family carers. As such, perioperative experiences and individual perceptions of these consumer groups are examined. The generation of perceived needs and meaningful experiences regarding perioperative care requires individual construction and subsequent interpretation. In this way, this research uses the epistemology of Constructionism (Crotty, 1998). Constructionism holds the view that "all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context" (Crotty, 1998, p. 42).

Critical theory will be used as the theoretical framework to underpin the methodological approach of this study. In Constructionism, there is a focus on "the collective generation [and transmission] of meaning" (p.58). This construction of meaning from social interaction is further extended when critical theory is applied. Crotty (1998) purports that Constructionism fosters a critical spirit through the emphasis that it is culture which influences and shapes our views of the world. Without culture humans could not function, as we depend on it to govern our behaviour (Crotty, 1998). Critical theory has origins, notably through the works of the Marxist-orientated Frankfurt School of scholars, as well as Paulo Freire in Brazil (Crotty, 1998). In drawing from a critical theory perspective, the presence of hegemonic conflicts in society is recognized. As such, there is an disequilibrium in power distribution among societal groups, resulting in those belonging to ruling, or oppressed groups (Crotty, 1998).

3.2. Why a co-design methodological approach?

There has been a recent cultural and political shift towards consumer participation in research, particularly within health care. Consumer participation is an important methodological feature of this research, one which aims to align with the chosen Critical Theoretical perspective. This shift has resulted in a focus towards shared decision making in treatment and more broadly, health care re-design and quality improvement (Palmer et al., 2019). In response, co-design methodologies have been adopted within these areas as a way to ensure consumer participation (Palmer et al., 2019).

As a necessary precursor to a potential re-design of health services, "participatory and narrative methods are employed to develop a deep understanding of the experiences of care (both in terms of receipt and delivery of services)" (Dimopoulos-Bick et al., 2019, p. 94). Through a better understanding of patients' feelings, beliefs or fears, that this may help health care providers to optimize the management of health consumers during the perioperative period (Gobbo et al., 2020). Subsequent evaluation of patient experiences with the health care system can contribute to the overall care process through the development and assessment of quality indicators to identity areas for improvement.

3.3. The application of co-design for research involving ethnically diverse population groups

Due to the underrepresentation of those from ethnic minority groups in health care research, a co-design methodology has been used in this current study (Robert, 2013). Co-design has been described as an umbrella term covering both community design and participatory design (Perrott, 2013). Historically, researchers have employed participatory research frameworks to enable greater voice and increase social change when working with those from ethnic minority populations (O'Brien et al., 2020). In particular, Participatory Action Research (PAR) and Community-Based Participatory Research (CBPR) approaches have predominantly been used when working with those from ethnic minority populations. Participatory research approaches recognize a need for the community whom the research is focused on, to fully participate in all aspects of the research, and to exercise power and control in identifying sustainable solutions (Minkler, 2000a). This is a cyclical approach which aims to engage with communities in researching, acting and reflecting, and leads to further inquiry and action for social change (Minkler, 2000b).

The Federation for Ethnic Community Councils Australia (FECCA) also advocate for the use of co-design research methods. This is to ensure that the wellbeing and satisfaction of ethnically diverse older Australians is measured, analysed and reported. The co-design of services should engage those from ethnically diverse communities in the research and design processes for health services to ultimately meet their needs (Federation of Ethnic Communities' Councils of Australia [FECCA], 2015).

4. Method

4.1. Experience based co-design (EBCD)

As a study protocol article, the specific co-design methodological approach undertaken in this research will now be outlined. One co-design approach that has developed specific methods is Experience Based Co-design [EBCD] (Robert, 2013). It utilizes consumer's narratives through in-depth interviews, observations and group discussions with the aim to identify key "touch points". "Touchpoints" are the crucial moments, good and bad, that shape an overall experience, and will represent the key moments where people's subjective experience of the service is shaped (Dewa et al., 2020). This then guides the overall design process. From here, consumers and stakeholders work with the areas for

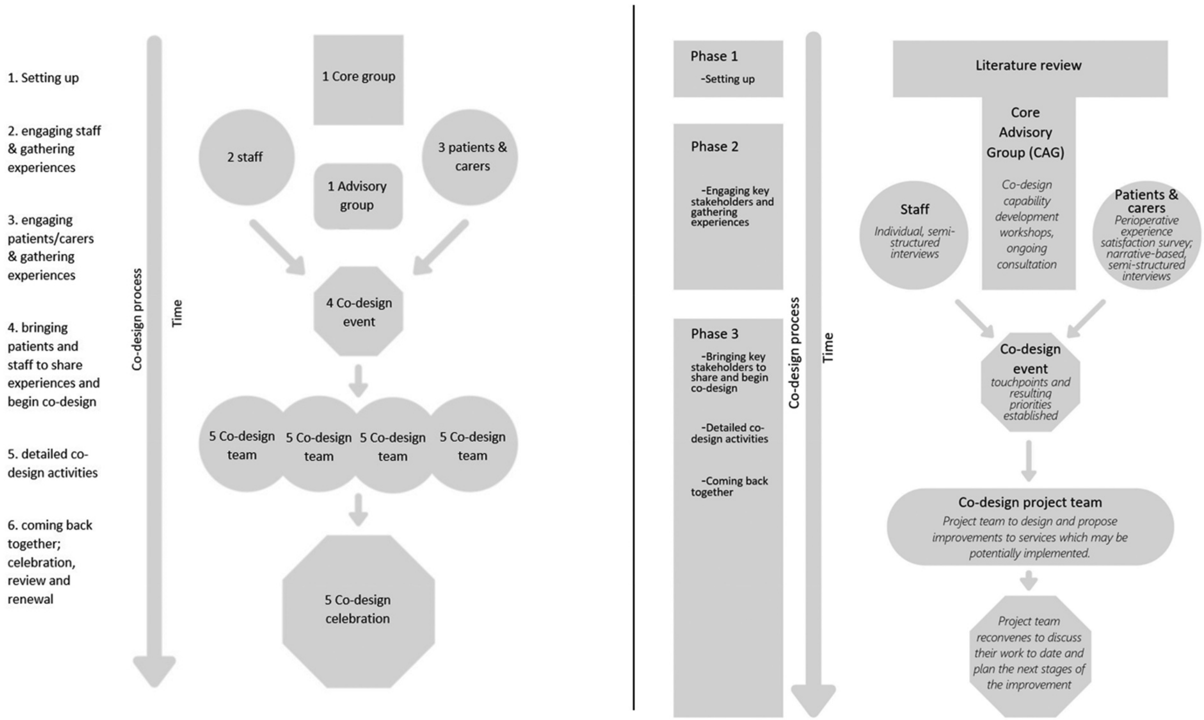
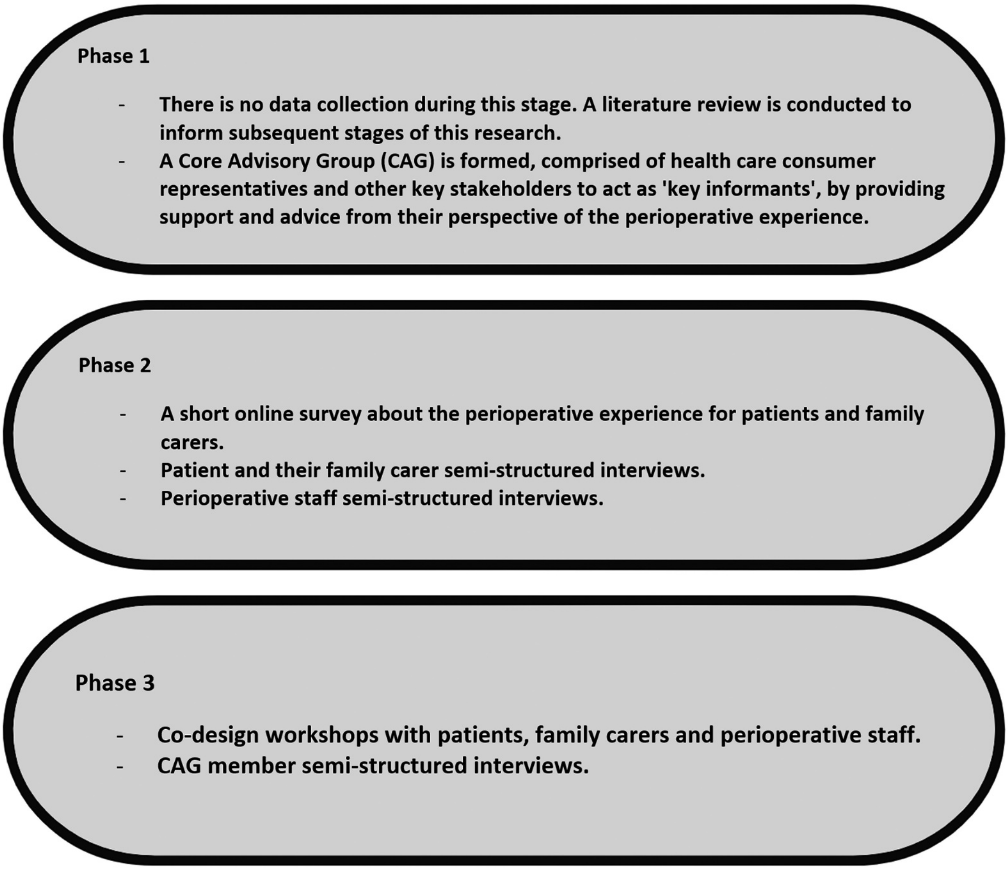


Figure 1. Image comparison of experience based Co-design (EBCD): a six-stage design process (Robert, 2013, p. 7) (left) and the current study, tailored approach to co-design (right).

improvement to create solutions in a collaborative manner (Robert, 2013; Robert et al., 2021).

There is no single one way to perform EBCD (Dawda & Knight, 2017). The EBCD approach as described by Robert (2013), is depicted on the left side of Figure 1. In side-by-side comparison, the image on the right side demonstrates the ways in which the current study has applied this EBCD



Phase 1

- **There is no data collection during this stage. A literature review is conducted to inform subsequent stages of this research.**
- **A Core Advisory Group (CAG) is formed, comprised of health care consumer representatives and other key stakeholders to act as 'key informants', by providing support and advice from their perspective of the perioperative experience.**

Phase 2

- **A short online survey about the perioperative experience for patients and family carers.**
- **Patient and their family carer semi-structured interviews.**
- **Perioperative staff semi-structured interviews.**

Phase 3

- **Co-design workshops with patients, family carers and perioperative staff.**
- **CAG member semi-structured interviews.**

Figure 2. Summary of the three phases of this co-design approach.

approach. In particular, the project has been conducted over 3 distinct phases (indicated on the right hand side of Figure 1 and summarized in Figure 2) which began in 2021.

Data was collected from 2022 – 2023. The 3 phases are outlined further below. Applying the EBCD approach in this tailored way allows for the principles of co-design to be integrated to meet the current research aim and to answer the research questions. To assist in achieving data saturation, data triangulation will be achieved through the multiple methods of data collection, in order to explore different perspectives of the same phenomenon (Francis et al., 2010).

4.2. Tailored study phases

The original EBCD six stage process described in Robert (2013) was tailored into a phased progression for this current study. Tailoring the process into three distinct phases afforded the research team a systematic approach to organizing each method of data collection in a logical progression which allowed each subsequent phase to be based upon the preceding phase.

The following sub-sections will detail the methods undertaken, and outline any outcomes achieved thus far. This is presented without specific findings, as the analysis of collected data is yet to be completed. The structure is intended to present the linked progression between study phases, by also presenting how the outcomes or anticipated results from each phase were used as a foundation to inform the subsequent phase.

4.2.1. Phase 1 methods and outcomes

Phase 1 of this study commenced with a comprehensive literature review, serving as the foundation for subsequent stages, including the formulation of interview protocols. This phase also included “setting up”, which is part of the original EBCD process described in Robert (2013). At this point, the main tasks were to establish the governance and project management arrangements. Notably, it involved contacting healthcare consumer representatives and key stakeholders, culminating in the formation of the Core Advisory Group (CAG), the process of which will now be elaborated upon while also highlighting adjustments, adaptations, or novel developments necessitated by the flexible nature of the study.

These early meetings underscored the importance of adaptability, an aspect of the study that cannot be overstated. This is because each meeting would garner another recommended lead to contact who had expertise or experience in an aspect of the research topic. None of those who were met with had pre-existing relationships with members of the research team, and so the value of professional networking and rapport-building during these meetings was in establishing a level of motivation that would ensure some level of engagement and interest in the research. This was crucial to ensuring successful progression of the research throughout the study phases. Without this initial support, the co-design process would not have been made possible, as it was reliant on “cold calling” people based on their professional titles and affiliations, and them being willing to meet and discuss the topic, even if not wanting to be involved on an ongoing basis as a Core Advisory Group member.

The nature of these scoping discussions were about garnering interest and appropriateness for project involvement with non-health care consumer key stakeholders as key informants (Polit & Beck, 2022). Subsequently, outreach was extended to Local Health District (LHD) personnel overseeing consumer and community engagement initiatives, with a specific focus on accessing health consumers with firsthand experiences related to ethnically diverse older adults undergoing surgery and receiving care from their relatives. Following these consultations, it was recommended to adhere to the guidelines outlined in the LHD “Tools for Partnership with Consumers” handbook, which included presenting the research project at the LHD consumer council meetings—a monthly forum attended by LHD consumer representatives tasked with addressing pertinent issues and identifying priorities (Wales, 2021). Leveraging the connections established through this presentation, a Core Advisory Group (CAG) was then formed with included health care consumer representatives and the key informants. A total of 10 members ($n = 10$) were recruited into the CAG. CAG member roles are listed in Table I.

A “start up workshop” (Dawda & Knight, 2017) was held to enhance engagement, and this involved CAG member introductions, meeting together to discuss different points of view about the project, and to learn about the co-design process. According to Dimopoulos-Bick et al. (2019), a key part of success in co-design projects must be to build participant preparedness and capability. The CAG met on an ongoing basis for the purpose of advice and support throughout the co-design project, so that collective decisions about the next steps could be made. Another CAG task was to inform survey and interview approaches. These meetings helped maintain the focus on health care consumer experience and supported developing a shared purpose for the project.

This phase of the study is complete. As an outcome from Phase 1, recruitment for the Core Advisory Group (CAG) allowed for initial priorities to be actioned. These priorities involved establishing a clear process for early and sustained engagement with which assisted in the successful planning, management and implementation phases of health care

Table I. Roles of Core Advisory Group (CAG) members.

- Health consumer representatives x2
- Hospital patient experience manager who then became a co-design and consumer engagement manager with a state government health agency
- The Local Health District multicultural team member to establish community group leader contacts
- Academic expert in the areas of both nursing and ageing
- Local health district safety culture coordinator
- Perioperative nurse
- A pre-admissions and day stay Nursing Unit Manager (NUM)
- Co-design process consultant
- Interpreting and translating service representative

consumer, family carer, community group and perioperative staff engagement activities. For example, collaborating on a Terms of Reference, agreement on mode and frequency of communication.

4.2.2. Phase 2 methods

Data collection for phase 2 has been completed, however analysis is forthcoming and findings will be reported on in subsequent scholarly works. This phase of the study involved engaging staff, patients and carers to gather experiences concurrently. "Gathering experiences" from staff, patients and carers is part of the original EBCD process described in Robert (2013). Data was collected from patients from ethnically diverse backgrounds, and their family carers. Results from a qualitative *patient and carer perioperative experience satisfaction survey* aided in determining common needs across different cultures, and helped to further refine proposed interview questions. This was an online, national survey that targeted those who wanted to provide their anonymous perspective, but chose not to be interviewed. The option to be contacted for a follow up interview was provided upon completion of the survey.

Following this, older adult patients as well as family carers of older adult patients from ethnically diverse backgrounds were interviewed, and asked questions that focused on describing perioperative experiences of care. A semi-structured interview schedule was used.

A variety of staff such as leaders in health care governance and leadership roles, and various perioperative clinicians were interviewed about their experience of working within a perioperative service, while caring for ethnically diverse older adult patients. A semi-structured interview schedule was again used. All interviews were audio-recorded and transcribed. The final questions that were asked in all interviews were based on literature review findings from Phase 1, results from the patient and carer perioperative experience satisfaction survey, and in collaboration with the CAG. Data collection methods throughout Phase 2 were combined to represent all the key touchpoints in a service, to be used as a foundation for the co-design workshop in Phase 3 of this study.

4.2.3. Phase 3 methods

Phase 3 of this study included bringing those involved (patients, carers, staff) together "to share experiences and begin co-design", which is part of the original EBCD process described in Robert (2013). While data collection for this phase has also been completed, future analysis and overall findings will be reported on in subsequent scholarly works. A co-design workshop was held, during which the respective staff, patient and family carer touchpoints from Phase 2 were presented. CAG members were present during the workshop, and aided in facilitation of smaller group discussions. It was at this time that patients, carers and staff used the issues highlighted as a basis to identify joint priorities for potentially improving perioperative services. Resulting priorities for practice implementation were established as an outcome from the workshop. Though beyond the scope of this methodology article, it is aimed that from this point, patients, carers and staff involved in the project will now become an ongoing co-design working group that works to design and propose improvements to services which may be proposed for clinical implementation. On an ongoing basis as determined by the co-design working group, the group will reconvene to discuss their work and plan the next phases of the service improvement process. To directly address the first research question, CAG members have been invited to participate in a semi-structured interview about their perspectives and experiences of participation and involvement in the process of co-design after the workshop was completed.

4.3. Sampling

Purposive sampling and snowball sampling were used to recruit participants for Phase 2 and 3. Purposive sampling implies the intent to carefully select certain types of participants who can best enhance understanding of the issues under study (Polit & Beck, 2022). The population for this study are older adult patients (over 65 years of age) who have undergone a surgical procedure in Australia. People over 65 are generally classified as "older" by the Australian Bureau of Statistics (ABS) (Australian Government, 2017). The purposively derived subset of this will be those who are from ethnically diverse backgrounds.

Family carers of this patient population were also eligible to participate in this research. According to the Australian Institute of Health and Welfare (AIHW) (2019), a carer is a person who cares for another person (often a relative or friend) and has the responsibility for making decisions about that person's daily care.

To supplement the recruitment of all participant groups, snowball sampling has been used whereby eligible participants were referred to the first author who then extended an invitation to participate in the study. Snowball sampling is used commonly in research involving difficult-to-reach members of community groups such as ethnic minority populations (Valerio et al., 2016).

4.4. Recruitment

Contact was made with various health district staff whose portfolios involved consumer and community engagement projects, perioperative care, or multicultural health. These key stakeholders and staff acted as key informants (Polit & Beck, 2022). It was advised by these key informants to present the research project at the Local Health District consumer council (Wales, 2021). From contacts gained through this, a Core Advisory Group (CAG) was formed, which included health care consumer representatives.

Organisations that were noted as useful for participant recruitment purposes included engaging with state-based and national ethnic community councils, ageing research institutes, state and national Non-Government Organisations (NGOs) representing carers; health consumers and NGO networks representing older persons, multicultural health, and ageing migrant health.

Following ethical approval, a flyer about the research was posted in community venues, religious centres and online (social media pages). For the online survey, recruitment flyers invited participants to complete an online anonymous questionnaire via a weblink or QR code. For the interviews, a link for people to provide their contact details to participate was published on recruitment flyers. Participants chose what data collection method to participate in, and provided their informed consent. Participation in Phase 2 for example, was not required for inclusion in Phase 3.

Eighteen percent of older Australians speak a language other than English at home, and almost 6% either speak English not well, or not at all (Australian Institute of Health and Welfare AIHW, 2021). To accommodate for this diversity, translation of the recruitment flyers, informed consent forms and survey questions was made available. Translations were made available in the top 5 languages used at home (other than English), according to the 2021 Australian Census data. These were Mandarin (2.7%), Arabic (1.4%), Vietnamese (1.3%), Cantonese (1.2%) and Punjabi (0.9%) (Australian Bureau of Statistics ABS, 2022b). Interpreters for participant interviews and the co-design workshop were arranged as necessary, and no specific level of English language proficiency was required to participate. Health consumers who participated in the co-design workshops were renumerated according to the Health Consumers (2022) document *"Remuneration and reimbursement guidelines for consumer involvement in health and medical research"*.

Perioperative staff members whose role involves interacting with, or caring for older adult patients from ethnically diverse backgrounds were eligible to participate in the staff interviews and co-design workshop. National professional organizational bodies representing perioperative nurses, surgeons, and anaesthetists supported the recruitment processes for this sample group.

4.5. Data analysis

While data analysis and reporting for Phases 2 and 3 are forthcoming, it is intended that three types of data analysis are to be used across the various forms of data collection. These are content analysis, dyadic analysis (as adapted from (Collaço et al., 2021), and thematic analysis. Content analysis will be used for the qualitative survey responses. Dyadic analysis will be used for the dyad interviews. Thematic analysis will be used for the staff interviews and co-design workshop. It is appropriate for data to be analysed in this combination as it not only adapts to the flexible nature of the EBCD approach (Dawda & Knight, 2017), but also has the potential to enrich the "experience-based" data components collected from the various perspectives of the different sampling groups.

Qualitative content analysis is a systematic method to analyse qualitative data. Descriptive content, latent and interpretative content are analysed and categorized and themes are formed (Lindgren et al., 2020). The analysis processes according to Elo and Kyngäs (2008) will be followed, and are represented as three main phases: preparation, organizing and reporting. Qualitative content analysis is an appropriate method of analysis for the qualitative survey responses, as it allows for large volumes of textual data to be dealt with and used in corroborating evidence (Elo & Kyngäs, 2008).

It is acknowledged that research studies do not adequately explore relationship dynamics between carers (e.g., family members) and care-recipients (e.g., older adult family members) (Karantzas & Simpson, 2015). The impact of surgical procedures on older surgical patients (over 65 years of age), and those who care for them following discharge is also poorly understood (Bryson et al., 2014). Given the dyadic nature of this caregiver-patient relationship

(Sherman & Boss, 2007), there is a need to employ these dyadic perspectives into the data analysis (Eisikovits & Koren, 2010). Dyadic analysis following the (Collaço et al., 2021) approach will allow for a deepening and broadening of content, by identifying any overlap or contrast in what is referred to as "the couple's data". The central aim of dyadic analysis is thus: "through this analysis, we achieve a dyadic version that is more than the sum of two individual versions'' (Eisikovits & Koren, 2010, p. 163).

The six phases of thematic analysis will be followed as per (Braun & Clarke, 2022). In this guide to performing thematic analysis, there is the assertion that all knowledge and therefore all meaningful reality is contingent upon human interactions within a social context. "Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 79) and " … examines the ways in which events, realities, meanings, experiences and so on are the effects of a range of discourses operating within society" (Braun & Clarke, 2006, p. 81).

5. Discussion

Active involvement of historically underrepresented population groups in health research contributes to more equitable health service delivery. This is a key strength of applying a co-design methodological approach to nursing practice and research which involves ethnically diverse population groups. Co-design does not promote equity through basic representation and periodic consultation which may or may not influence practice and research outcomes. Co-design promotes equity of health service delivery through the sustained engagement of understudied groups so that the outcomes influence clinical implementation in a genuine way. This research is an example of a genuine co-design approach is made apparent through sustained engagement of understudied population groups. This sustained engagement required shared purpose and decision making, capacity building, appropriate renumeration of health consumers and relationship development with ethnic communities and representatives to establish and maintain trust.

There are complexities which need to be addressed in order to achieve genuine co-design with health consumers from ethnically diverse backgrounds. People from ethnically diverse backgrounds are not one homogenous group, as language and culture are just two of the many attributes that can define a person (Aged Care Sector Committee Diversity Sub-group, 2019). This is an important consideration when accounting for potential challenges in engagement of older adult patients from ethnically diverse backgrounds. For example, a person may belong to a particular culture even though they do not speak the native language of the country commonly associated with that culture (Aged Care Sector Committee Diversity Sub-group, 2019).

In the Anderst et al. (2020) narrative review on consumer and community engagement in research, barriers among marginalized populations such as those from ethnic minority communities and the elderly, included low English proficiency and low health literacy. In addition, people with limited English proficiency, or low levels of literacy are routinely excluded from many clinical trials because they are viewed as being unable to provide truly informed consent (Hughson et al., 2016). Therefore, there is the potential that, in recruitment of ethnically diverse populations, participants who are fluent in the language of the country of study will not have the same barrier to participation as those who are not. The risk here is that those participants from ethnically diverse backgrounds who are more fluent in English, will be more represented than those that are not.

Hughson et al. (2016) examined barriers to and strategies for involving ethnically diverse patients in clinical research. Barriers to the inclusion of older adults from ethnically diverse backgrounds in health research are: "(1) mistrust; (2) communication barriers, including the complexity of written documents, language/literacy issues and lack of perceived benefit; (3) cultural barriers, including competing cultural beliefs/practices concerning health; (4) economic and time constraints; (5) mobility issues and health issues; and (6) opportunity barriers" (Hughson et al., 2016, p. 3). The research team for this current study has had to employ adaptive recruitment and data collection processes in an effort to overcome potential barriers. For example, older adult participants who had caring duties for grandchildren had limited availability. There were also technological limitations that required phone interviews as opposed to video conferencing, and interviews were offered as an alternative mode of data collection, if completing an online survey was not possible or preferred by participants.

It is also important to acknowledge barriers in place which are impacted by the researchers themselves. George et al. (2014) asserted that for researchers, a lack of knowledge about the cultural differences among ethnic minorities can result in ineffective communication strategies about health research at all stages, including recruitment, enrolment, and retention. In this research team's experience, lessons were learned about the challenges associated with cost. Adequate remuneration for research participation has been documented to be a key facilitator to research participation by ethnic minority populations (Bonevski et al., 2014; George et al., 2014), yet there lacks a consensus on how much exactly this should be, and in what form such as cash, gift cards, etc.

There was also the cost of interpreter use for interviews, and for the five language translations of recruitment and data collection materials. As another example, some participants provided a range of day and time slot availability to be interviewed, rather than a specific date and time. This was an unanticipated cost, as interpreting services would require full payment, even if the call went unanswered.

The co-design workshop due to the nature of having a combination of health consumers, perioperative staff and key stakeholders, may illuminate any dissonance between what researchers and perioperative staff perceive as the highest priority intervention aimed at optimizing perioperative care, and what the health consumer attendees actually want. This stresses two aspects of co-design involving ethnically diverse consumer groups; 1. An existing power imbalance (Dimopoulos-Bick et al., 2019) and 2. the importance of health consumer voices, particularly in understudied population groups. Having a majority of health consumer representatives who have been either older adult surgical patients or family carers of older adult surgical patients all from ethnically diverse backgrounds was part of the intended strategy to emphasize value of their experiences.

6. Conclusion

The aforementioned research aims and questions have been addressed through gathering perceptions, according to experiences with existing perioperative services. There are perioperative experiences and needs which are unique to older adult patients who are from ethnically diverse backgrounds. Co-design allows for health consumer voices to be highlighted and shared with key stakeholders including perioperative staff. Applying this methodology will help to determine how co-design may impact the development of culturally responsive perioperative nursing care for those from ethnically diverse communities.

Co-design requires a deep understanding of the experiences of care (both in terms of receipt and delivery of services), along with working collaboratively with health consumers and health care professionals to co-design improvements, and then implement changes. As the outcomes of co-design are the direct result of collating user experiences along with sustained engagement with health care consumers, co-design may be useful in shaping health practice and policy which aims to be authentic in providing optimal patient and carer experiences. Subsequent analysis and findings from phases 2 and 3 of this study will be reported on in future scholarly works once complete, which will aid in determining the value of phased collation of experiences and using these as a basis for collaboration in the co-design process.

There are significant challenges which may complicate the engagement process required when conducting co-design research with participants from ethnically diverse backgrounds. Despite recruitment and data collection strategies involving ways to minimize well-established barriers to research participation by ethnically diverse health consumers, there were still unexpected complexities experienced with engagement of health consumer representatives from ethnically diverse backgrounds. Clinicians and health researchers need to be cognizant of and well prepared for such crucial considerations when conducting similar research, or implementing similar safety and quality improvement projects.

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Notes on contributors

Charmaine G. Bonus is a registered nurse with experience primarily in perioperative settings. She completed her Bachelor of Nursing degree at Western Sydney University with the assistance of the UWS Smart Start Scholarship. Charmaine then went on to complete postgraduate studies through the University of Technology Sydney, completing a postgraduate diploma of nursing, with a sub-major in recovery and anaesthetics. In 2012, she graduated with a master's degree in nursing, majoring in clinical education. For 8 years, Charmaine worked as an academic with The Susan Wakil School of Nursing and Midwifery at the University of Sydney. Charmaine is also an alumnus of The University of Sydney, graduating from a Master of Education (Research). She currently works for the Australian Catholic University as a nursing Lecturer while also simultaneously a PhD candidate with Western Sydney University. Her PhD is about ageing migrant health, with a focus on perioperative experiences of this patient population group. She has been a part of the Australian College of Perioperative Nurses (ACORN) research committee, and is a current member of the Research and Data Working Group of the Australian Multicultural Health Collaborative.

Deborah Hatcher Professor is the Dean of the School of Nursing and Midwifery and Provost of the Parramatta South campus at Western Sydney University. Deborah is a registered nurse and experienced academic with 30 years of program co-ordination and teaching at undergraduate and postgraduate level, in Australia, Hong Kong and Singapore. Deborah's research and scholarly interests include ageing and aged care, chronic illness and primary health care. She continues to supervise BN (Honours), Masters of Research and PhD students. Deborah is regularly invited to review domestic and overseas nursing programs given her extensive experience in curriculum development and quality assurance. Professor Hatcher is a member of several local health district research and education committees, a member of the Australian College of Nursing and is a member of the Executive Council of Deans of Nursing and Midwifery.

Tiffany Northall joined Western Sydney University in 2011 and is a lecturer in the School of Nursing and Midwifery. Tiffany has significant teaching experience gained during her employment as a clinical nurse specialist and as a teacher at TAFE and university. Tiffany has worked clinically in acute care since graduating in 1995. Her experience has been gained in a range of fields including palliative care, high dependency, patient flow, medical surgical, emergency and primary health care. Tiffany has completed the Bachelor of Nursing degree, Masters of Nursing Research and Doctorate of Philosophy at Western Sydney University and has also completed a Graduate Certificate in Clinical Education.

Jed Montayre is an Associate Professor in the School of Nursing and Director of the Centre of Evidence-based Practice for Healthcare Policy at Hong Kong Polytechnic University. Jed has a strong clinical background in gerontology and medical-surgical nursing. Recently, Jed has been awarded 'Distinguished Educator in Gerontology Nursing', an international recognition awarded by the prestigious National Hartford Centre in Gerontological Nursing the US, which builds upon the legacy of The John A. Hartford Foundation, which represents the gold standard of excellence in gerontology. The award recognises Jed's contribution to teaching and undertaking research in gerontology nursing. Jed has led an international team for projects commissioned and funded by the World Health Organisation, one project aimed to review community-based age-friendly interventions and programs as part of the WHO and UN Decade of Healthy Ageing 2020-2030 initiative. Jed has written and published several research papers on influence of culture to health, transitions, adjustments and acculturation experience of older immigrants into the mainstream societies. Jed is Deputy Editor-in-Chief of Australasian Journal on Ageing.

ORCID

Charmaine G. Bonus http://orcid.org/0000-0001-6572-2360

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