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Journal article

Compassion satisfaction and compassion fatigue in Australian emergency nurses : A descriptive cross-sectional study

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1 Int Emerg Nurs

2 COMPASSION SATISFACTION AND COMPASSION FATIGUE IN AUSTRALIAN
3 EMERGENCY NURSES: A DESCRIPTIVE CROSS-SECTIONAL STUDY
4

5 Short title: Compassion in Emergency Nurses

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1 [Conflict of Interest](#)

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1 COMPASSION SATISFACTION AND COMPASSION FATIGUE IN EMERGENCY NURSES: 2 A QUANTITATIVE CROSS-SECTIONAL STUDY

3 **Abstract**

4 Introduction

5 Emergency nurses are at risk of compassion fatigue. Compassion fatigue caused by
6 exposure to suffering may compromise the individual's personal wellbeing and reduce work
7 efficiency.

8 Methods:

9 A quantitative cross-sectional survey with open responses was conducted using the
10 Professional Quality of Life: Compassion Satisfaction and Compassion Fatigue (ProQOL)
11 scale and open-ended questions. Responses from a convenience sample of 86 nurses from
12 two hospital emergency departments in Victoria, Australia, were analysed.

13 Results:

14 The median score for Compassion Satisfaction was 78% with all nurses reporting average to
15 high scores. Most had average levels of Compassion Fatigue: Burnout median score was
16 53% and Secondary Traumatic Stress median score 49%. No statistically significant
17 correlation was found between scales nor with influencing demographic characteristics. A
18 qualification in emergency nursing was predictive of Compassion Satisfaction. Six
19 descriptive job-associated factors contributed to nurses' stress: human resources, the
20 organisation, job-specific components, patient mix and professional and personal
21 components.

22 Conclusion/s:

23 Average to high levels of Compassion Satisfaction and low to average levels of Compassion
24 Fatigue were found in emergency nurses. Issues contributing to stress were work and role
25 related. An understanding of these stressors may help nurses and nurse managers to
26 ameliorate emergency nurses' levels of stress and help limit staff burnout.

27 *Keywords*

28 Burnout; compassion satisfaction, compassion fatigue; emergency department; emergency
29 nurses; secondary traumatic stress.

1 INTRODUCTION

2 Nurses are known to be at risk of compassion fatigue owing to the stresses of caring for
3 patients who are in significant emotional pain and physical distress (1, 2). This study
4 explores the level of compassion felt by Australian emergency nurses. It is recognised that
5 the degree of compassion in nurses working in speciality practice can affect the quality of
6 patient care, organisational capacity, staff retention and nurses' general wellbeing (3). While
7 the study setting is in Australia it is likely that compassion fatigue and stress is something
8 that emergency nurses worldwide experience, therefore the design and findings of the study
9 may be useful internationally.

10 Emergency nurses are working at the front line between the community and the hospital
11 setting (4). They often need to deal with complex patient loads, long shifts, demanding
12 physicians and a fast-paced environment. Nurses are routinely exposed to the acute and
13 first stages of illness and injury and are paramount in the critical work of resuscitating
14 patients. Emergency nursing work is described as being emotionally and physically
15 challenging (5, 6). Among numerous studies of nurses' caring and compassion, the majority
16 have explored compassion fatigue and stress as an important antecedent to lack of retention
17 of nurses (7-9).

18 As in other countries, with the aging of the Australian population, emergency patient
19 presentations are increasing in complexity and demand within emergency departments is
20 growing (10). Studies show that emergency nurses are under increase time pressures both
21 internationally (11-13) and in Australia (14). They face greater physical demands, greater
22 patient expectations and have lower decision authority and less adequate work procedures
23 than those nurses working in other departments. Emergency nurses are increasingly
24 exposed to aggressive behaviour and patient violence (15). The results of an Australian
25 study reveal that younger age nurses and those without post-graduate qualifications may be
26 more likely to experience stress, for 20% of 132 nurses surveyed in a tertiary hospital had
27 elevated levels of compassion fatigue (16).

28 Professional quality of life is described as having both positive elements (compassion
29 satisfaction) and negative elements (compassion fatigue) (17). The key terms that are used
30 throughout this paper are described in Table 1.

1 Table 1 Descriptors for key terms

| 2 KEY TERM | 3 DESCRIPTION |
|------------------------------------|--|
| 4 Compassion Satisfaction (CS) | 5 The positive feelings derived from helping others through traumatic situations. |
| 6 Compassion Fatigue (CF) | 7 A combination of physical, emotional, and spiritual depletion associated with caring for patients in significant emotional pain and physical distress. According to Stamm, 2010 (17) this comprises two compassion fatigue elements: Burnout and Secondary Traumatic Stress. |
| 8 Burnout (BO) | 9 A cumulative state of frustration with a person's work environment that develops over a long time. |
| 10 Secondary Traumatic Stress STS) | 11 Stress related to negative feelings resulting from fear and work-related trauma. |

12 Source: Stamm, 2010 (17); Figley, 1995 (1)

13 3

14 According to Stamm, 2010 (17), maintaining a balance between these positive and negative
 15 aspects of caring can help sustain employees' morale in their workplace. Many studies have
 16 used the Professional Quality of Life: Compassion Satisfaction and Compassion Fatigue
 17 (ProQOL) measure to examine compassion (17). This instrument was developed by Figley
 18 and Stamm from 1995 with a sample of 463 people. Compassion Satisfaction items were
 19 derived from the positive and altruistic aspects that people take from their work and
 20 Compassion Fatigue comprised the negative aspects. Compassion Satisfaction and
 21 Compassion Fatigue are conceptual opposites and are not co-related. Compassion Fatigue
 22 comprises two independent subscales: Burnout and Secondary Traumatic Stress. The
 23 validity and reliability of the scales was previously established, including through publication
 24 of over 200 papers and instrument reliability data (17). In regard to compassion, the
 25 pressures and contextual surroundings of emergency work may place emergency nurses at
 26 risk of having more compassion fatigue than compassion satisfaction (11, 12, 18, 19). It is
 27 therefore important that the positive emotional aspects such as compassion satisfaction be
 28 encouraged while compassion fatigue should be recognised and addressed. Despite
 29 worldwide studies related to nurses' levels of compassion satisfaction and compassion
 30 fatigue, there is very little information about these levels within emergency nurses. Studies
 31 regarding this in emergency nurses have mainly been undertaken in the USA.

32 Given that little is known about the compassion status of emergency nurses internationally
 33 and nationally, and that much other evidence is dated, this study aimed to conduct a cross-
 34 sectional survey to examine the current situation in two Australian emergency departments.

35 25

METHODS

The design is a cross-sectional observational descriptive study incorporating quantitative data (Figure 1) and descriptive participant responses. The research questions to be answered are: (a) What is the prevalence of Compassion Satisfaction (CS) and Compassion Fatigue (CF) in Emergency Nurses?; (b) What demographic factors correlate with Compassion Satisfaction and the Compassion Fatigue subscales: Burnout (BO) and Secondary Traumatic Stress (STS), and (c) What themes emerge when emergency nurses are asked open-ended questions regarding satisfying or exhausting/draining components of emergency work?. The study reporting aligns with the STROBE checklist for reporting observational studies (20).

INSERT Figure 1 about here: Methodology

Sample and Setting

Emergency nurses were sampled from the emergency departments in two major metropolitan acute care hospitals in Melbourne, Australia. Together, these departments have 110 beds and manage approximately 220,000 emergency presentations per year to service 17% of the state's population (21).

All permanently employed registered nurses and enrolled nurses working in one of the two emergency departments were invited to participate in the study (approximately 235 staff). Study information and an invitation to participate was distributed by nurse unit managers, inviting completion of an online questionnaire. The survey was open for six weeks in 2015 and two reminder messages were sent.

Instrumentation

The online questionnaire comprised three components: a demographic survey, the Professional Quality of Life (ProQOL v5) scale (17) and two open-ended questions. The demographic online survey asked about participants' age, gender, qualifications, nursing experience, race, ethnicity, current job status, and role.

The ProQOL 5 instrument is a 30-item self-report measure, anchored by a five-point Likert scale (17). This was chosen because of its ability to measure compassion satisfaction and compassion fatigue as individual concepts to describe the positive and negative effects on nurses of experiencing secondary trauma through seeing the suffering of patients.

Participant perceptions are relative to nurses' experiences in the last 30 days.

1 This validated instrument has been widely used to self-report compassion (17), including in
2 nurses (6, 8, 11, 22, 23). As mentioned earlier, the instrument comprises three subscales
3 (CS, BO and STS), with the psychometric properties such as internal validity having been
4 variously reported in many studies. Stamm (17) reports the reliability of the three scales
5 ranges from α 0.84 to 0.90 and that correlations between scales showed only 2% shared
6 variance ($r = -0.14$; $\text{co-}\sigma = 2\%$; $N = 1,187$) with CF and 5% shared variance with BO ($r =$
7 -0.23 ; $\text{co-}\sigma = 5\%$; $N = 1,187$), thus, indicating that the scales are separate entities.

8 Each subscale has 10 question items based on a five-point response scale of 1 (never) to 5
9 (very often) (17). The current study outcomes were achieved by totalling the ProQOL 5
10 scores for each subscale and ranking total scores according to Stamm's levels of evidence.
11 For CS: a score of ≤ 22 denotes low levels of CS; 23–41 indicates average levels, and ≥ 42
12 indicates high levels. For CF-BO: a score of ≤ 22 indicates low levels, 23–41 indicates
13 average levels, and ≥ 42 reveals high levels of CF. For CF- STS: the same ranking applies.

14 The instrument's reliability in the current study was satisfactory, as indicated by Cronbach's
15 alpha 0.86 for Compassion Satisfaction (CS), 0.80 for Burnout (BO) and 0.72 for Secondary
16 Traumatic Stress (STS). Cronbach's alpha shows the internal consistency, a form of
17 reliability. It shows correlations between items of the same attribute (24).

18
19 Additionally, two open-ended questions were posed in the online survey: (i) What do you find
20 rewarding / successful at work? (ii) What do you find draining / exhausting at work? The
21 survey and additional questions were administered electronically, using SurveyMonkey
22 (surveymonkey.com).

23 Data analysis

24 Questionnaire data were downloaded and analysed using the software IBM-SPSS version
25 23.0 (25). The results were collated and analysed according to the ProQOL 5 instructional
26 manual (Stamm, 2010). It was noted that each of the three scales comprising 10 items is
27 scored out of a maximum of 50 points. The negatively posed response items 1, 4, 15, 17,
28 and 29 were reverse-coded as required. Demographic characteristics were analysed
29 descriptively to explore summary data (total number, mean, median and range), as were the
30 three ProQOL scales. Correlations between ProQOL scales' total scores and demographic
31 characteristics were assessed with use of Pearson's Product Moment Correlation co-efficient
32 applied to the interval and dichotomous variables; t -tests and ANOVA were conducted where
33 relevant. A p -value of <0.05 was considered statistically significant for all tests.

1 A hierarchical multiple regression analysis was conducted to test for variables that may
2 predict Compassion Satisfaction. After confirming data suitability, firstly, the independent
3 variable 'department' (comprising A and B) was added in order to statistically control for any
4 difference in responses of staff between departments. Second, seven other independent
5 variables (listed in Table 3) were transformed into suitable dichotomous or interquartile
6 formats and were added to the equation to be tested. The analysis conducted was guided by
7 the method of Pallant (26).

8 Open ended questions were categorised using descriptive content analysis. Three
9 researchers independently coded the questions and results were combined and agreed
10 collaboratively.

11 Ethics approval

12 The project was approved by the Human Research Ethics Committee, (approval no.14348L)
13 (*blanked for anonymous review*) and the Human Research Ethics Committee, (approval no.
14 14/3957).

15 Implied consent was obtained by completion of the survey. Emotive issues raised on
16 distribution and completion of the survey were pre-empted. Details for national helplines and
17 emotional support were provided in the survey.

18 RESULTS

19 Response data from n = 86 emergency nurses were analysed (three were incomplete and
20 were removed). The response rate was approximately 38%.

21 Demographics

22 Most participants were female (91%; n= 78) and 7% (n= 6) were male and 2% (n=2)
23 participants did not report gender. Their ages ranged between 18 and 61 years. Half (56%)
24 were aged less than 30 years, 26% were aged 31-40 and 16% were aged >41 years. Most
25 nurses (81%) were born in Australia and 76% reported Australian ethnicity (and 18% Asian
26 or European). Their average years of nursing experience was 10.2 (SD: 9.14), ranging from
27 one to 48 years. The average length of Emergency Department experience was 7.0 (SD =
28 7.4) years with a range spanning one year to 41 years. For 24%, employment involved full-
29 time work and 76% worked part-time. Most nurses (77%; n=66) had completed specialist
30 training in emergency nursing (such as a certificate or diploma) in addition to their nursing
31 entry-level qualification.

INSERT TABLE 2 ABOUT HERE Interpreted Compassion Satisfaction and
Compassion Fatigue scores

Table 2 Interpreted Compassion Satisfaction and Compassion Fatigue scores

| Domain and Element | Low score n (%) | Average score n (%) | High score n (%) |
|--|--------------------|---------------------------|---------------------|
| Compassion Satisfaction (M= 38.3 (SD 5.0); Md 39, range 23-47) | 0 (0.0) | 63 (73.3) | 23 (26.7) |
| Compassion Fatigue | | | |
| Burnout (M= 26.6 (SD 5.4); Md 26.5, range 16-40). | 20 (23.3) | 66 (76.7) | 0 (0.0) |
| Secondary Traumatic Stress (M= 24.6 (SD 4.5); Md 24.5, range 12-37). | 27 (31.4) | 59 (68.6) | 0 (0.0) |

Legend: M= mean; Md = median, SD = standard deviation. Total possible score is 50 points for each scale and subscale; the quality range for the transformed scores according Stamm 2010 (p 28-30) (17) is low score = ≤ 22; average score is 23-41; high score is >42.

Compassion

Compassion Satisfaction scores were all average to high. As presented in Table 2, of a possible total score of 50 points, 73.3% had an average score, 26.7% a high score and none had a low score.

Compassion Fatigue is measured by two independent subscales: Burnout and Secondary Traumatic Stress. Results revealed low levels of Burnout for 22.3%; average levels for most participants (76.7%) and none recorded high levels. These low to average scores proved similar to those for stress. Scores for Secondary Traumatic Stress showed almost one-third (31.4%) reported low levels, two-thirds (68.6%) had average levels and none had a high level.

1 Associations between variables

2 Pearson's correlation and *t* tests were used to identify relationships between demographic
3 variables and Compassion Satisfaction, Burnout and Secondary Traumatic Stress. There
4 was a non-significant correlation between the three scales, confirming the instrument's
5 internal validity claim of independence. Although there were some differences between
6 compassion scale responses and nurses' demographic variables, none of these reached a
7 level of significance. The only trends noted were in CS which appeared higher in the smaller
8 department B and STS appeared lower; plus increasing CS in nurses as they aged: 31-40
9 year-olds had a score of 37.1 and those ≥ 41 years scored 39.2. There was no significant
10 correlation of any of the three scales with an individual demographic variable ($p = >0.05$),
11 suggesting that this study may not be sufficiently powered to identify differences.

12 Hierarchical multiple regression was used to further explore relationships between the
13 variables that may predict nurses' coping evidenced by Compassion Satisfaction. After
14 controlling for the department setting (department A or B), regression revealed a significant
15 model and a relationship between emergency nursing education and Compassion
16 Satisfaction. The main independent contributor to the model was participants' ED-specific
17 nursing education (beta 0.269, $t = 3.320$, $p = 0.001$). As seen in Table 3, two additional
18 measures (religiosity and ethnicity) accounted for a small part of the variance. The
19 Compassion Satisfaction model, as a whole, could significantly predict 97.3% of the variance
20 in compassion satisfaction ($R^2 = .973$, $F = (4, 76) = 63.862$, $p = 0.000$).

21 **Table 3** Predictors of Compassion Satisfaction

| MODEL | | Standardized Coefficients | | Sig. |
|-------|---|---------------------------|----------|------|
| | | Beta | <i>t</i> | |
| 1 | Emergency Department A or B | .939 | 24.296 | .000 |
| 2 | Emergency Department A or B | .175 | 3.199 | .002 |
| | Specialist training in Emergency Nursing Yes/No | .269 | 3.320 | .001 |

| | | | |
|--|-------|-------|------|
| Religious belief Yes/No | .198 | 3.488 | .001 |
| Ethnicity – Aust or NZ/ /Caucasian, or Asian | .152 | 2.596 | .011 |
| NO IMPACT: | | | |
| Employment status Fulltime/Part-time | .174 | 1.881 | .064 |
| Age: 18-30 /31-40/ >41 years | -.011 | -.226 | .822 |
| Nurse with postgrad Cert/Dip/Degree Yes/No | .033 | .472 | .638 |
| Years in nursing: quartiles 4/7/12 | .032 | .456 | .650 |

2 Descriptive findings

3 Content analysis of nurses' open-text responses revealed further impacts of the work
4 environment. Eighteen participants designated the most common rewarding and satisfying
5 issue at work in emergency as 'job satisfaction'. Seventeen thought that 'helping vulnerable
6 people' was rewarding. These caring elements of nursing are likely to influence compassion
7 satisfaction. Positive professional components such as 'making a difference', 'job tasks' and
8 'collegial interactions' were also common responses that were posited as rewarding (Figure
9 2).

10 **INSERT FIGURE 2 (rewarding components) HERE**

11 **INSERT FIGURE 3 (exhausting components) HERE**

12
13 The 'draining and exhausting' components comprised 'care delivery', 'human resource
14 management', 'emergency patient type', 'patient and family social components', and
15 'professional and personal components' (Figure 3). The lead extenuating factor suggested
16 as relating to compassion fatigue was 'workload'. This could be quantified as the most
17 influential factor, with over one-third of the nurses (37%; n=33) identifying this as the key
18 cause of exhaustion. This was followed by 'emergency patient volume' (n = 20, 22.4%) and
19 'abusive patients' (n = 14, 15.7%) as contributors to exhaustion. Further exploration of the
20 work environment components seen as rewarding or exhausting is presented in Figure 2 and
21 Figure 3.

1 DISCUSSION

2 Nurses working in the surveyed emergency departments were found to have average and
3 high levels of compassion satisfaction and average to low levels of compassion fatigue. An
4 average compassion satisfaction was revealed by 73% and a high level by 24%. Burnout
5 was low to average in this cohort (BO: 23.3%, 76.7% respectively); none had high levels.
6 Similarly, Secondary Traumatic Stress was limited to low and average scores (STS: 31.4%;
7 68.6%). This reflects a good balance of the positive factor CS with the negative factor CF,
8 which is required to maintain nurses' resilience and prevent compassion fatigue (9). As
9 expected, there was no correlation between the positive element CS and the negative
10 element CF, suggesting the instrument ProQOL 5, had correctly captured the figure.

11 Although there was no Australian study identified to enable a direct comparison, our findings
12 concur with much of the literature from the USA. Similar to our study, Flarity et al. (9) used
13 the ProQol 5 in investigating the effectiveness of an educational program on compassion
14 fatigue for n = 59 emergency nurses in Colorado, USA. They reported median scale values
15 were average to high for CS (Md = 42), low to average for BO (Md = 23), and low to average
16 for STS (Md 24), which reflect our findings. They noted significant positive changes in
17 compassion after a 4-hr educational intervention for emergency nurses.

18 Hunsaker et al (2015) who surveyed 284 emergency nurses across USA using the ProQOL
19 also reported average to high levels of compassion satisfaction and low to average levels of
20 compassion fatigue and burnout. In their study, 56.8% of the emergency nurses had an
21 average level of CS, 65.9% were in the low level of CF, and 54.1% were in the average level
22 of burnout. Furthermore, similar to our study, older emergency nurses had significantly
23 higher CS than younger nurses. They also showed that younger nurses reported higher CF
24 (STS and BO).

25 A study of n = 221 critical care nurses surveyed in a large USA medical centre showed that
26 all three ProQOL subscale scores were within the average range (Sacco, Ciurzynski et al.
27 2015). However, group and individual findings in the CS and CF measures differed
28 significantly. Differences were found in CS by sex, age, acuity level and management
29 change. Notably and in contrast to our findings, nurses 40 to 49 years old had significantly
30 *lower CS* ($p = .03$) than did nurses in other age groups. Differences were found in CF by
31 age, acuity and management change.

32 All three of these studies conducted within the last five years indicate that nurses in these
33 specialty areas have recorded average-high compassion satisfaction and are not commonly
34 exposed to high levels of compassion fatigue (measured as burnout and secondary
35 traumatic stress) that may result from their experiences of seeing the pain and suffering of

1 patients. In all these studies, there was some evidence that younger and less experienced
2 nurses were at greater risk for stress while older and more experienced nurses were better
3 adjusted with higher satisfaction. In line with the logical explanation, a recently published
4 meta-analysis included data from 21 studies together with other recent research evidence
5 suggested that education and training may have a moderating effect on compassion fatigue
6 and burnout (27-30). A study by Von Rueden, 2010 (31) also found that secondary traumatic
7 stress was more prevalent in younger nurses (31). The literature, however, can be conflicted
8 as some earlier dated studies have noted high levels of burnout and stress. Hooper et al.,
9 2010 (11) who surveyed 49 emergency nurses and 65 nurses in other selected departments
10 in South Carolina USA in 2008, reported that 82% of emergency nurses had moderate to
11 high levels of burnout, and around 86% had moderate to high levels of compassion fatigue.
12 Physical symptoms and emotional symptoms are among recognisable trigger factors (32).

13 Past studies have explored a lack of job satisfaction and presence of burnout as key
14 antecedents of nurse turnover (11, 16). It may be that our present results indicate that
15 emergency nurses are adequately educated and well supported by managers and effective
16 organisational processes; to enable functioning despite the trauma and suffering they see in
17 their environment. Notably, our study participants were well educated with 77% reporting
18 completion of a specialty emergency nursing qualification in addition to entry level nursing
19 requirements. Specialty education may impact emotional preparedness for emergency
20 nursing, as may the length of emergency nursing experience.

21 Nursing is often regarded as synonymous with compassion and caring qualities. The
22 Unabridged Random House Dictionary defines compassion as "a strong desire to alleviate
23 the pain or remove its cause" (33). This is often a motivation for people to study nursing.
24 Compassion satisfaction is recorded as the positive aspects of caring that balance out the
25 negative aspects of exposure to human illness and suffering (34). Burnout, the alternative
26 emotional state, encompasses emotional exhaustion, depersonalization and negative
27 attitudes to patient suffering, with lessened feelings towards achievements (35). It may be
28 that in studies whose results oppose ours, where nurses' burnout is high, compassion
29 satisfaction is low. The consequence is that because emotional distress affects job retention,
30 staff numbers may be impacted with one study finding that 23% of nurses who were
31 stressed planned to leave their job within one year (36). It is difficult to measure compassion
32 fatigue without also knowing that an individual's work provides compassion satisfaction. In
33 this regard, the current study provides valuable insights.

34 Finally, we refer to the 'Discovery' components of the workplace environment that were
35 posited as new findings that have not been previously explored in research. These are:

- 1 • job associated care delivery
- 2 • human resource management
- 3 • emergency specific patients
- 4 • patient and family social factors
- 5 • professional factors
- 6 • personal factors

7 These components reflect both rewarding and exhausting work experiences. These need to
 8 be considered in the context of emergency nursing. There is a need to further explore factors
 9 that assist emergency nurses in their role and also those that form a barrier to compassion,
 10 such as time pressures, emergency volume and abusive patients. Health organisations
 11 should focus on creating systems that will enhance staff wellbeing and reduce the
 12 occurrence of BO and SCC in the healthcare workforce. These could be through providing
 13 staff general well-being training such as resilience training. By maintaining nurses' physical
 14 and mental health, it will enhance their performance and optimise the quality of clinical care.

15 Managers play an important role in supporting emergency nurses, for a change in manager/
 16 management was found to be one of the threats to nurses' compassion satisfaction (23).

17 Previous studies in this regard described four influencing components: environmental,
 18 organisational, professional and personal components. In Australia, Drury et al., 2014 (37)
 19 found that a nurse's capacity to cope can be enhanced through strong social, collegial
 20 support and infrastructure that supports the provision of quality nursing care and positive
 21 affirmation. From a survey of n = 491 direct care nurses in USA, Kelly et al., 2015 (38)
 22 suggest that meaningful recognition may increase compassion satisfaction, positively impact
 23 retention, and elevate job satisfaction.

24

25 Limitations

26 Several limitations of the study design are acknowledged. A convenience sample in the
 27 invited population may not represent all emergency nurses and therefore results should be
 28 interpreted with caution. It is possible that the respondents self-selected to participate
 29 because they were nurses who have manageable burnout and low stress levels. These
 30 respondents may have other intrinsic physical or mental strength to better manage their
 31 stress level compared to those non-respondents. Owing to the small sample, the design
 32 may have been underpowered to detect response differences. Self-report surveys are prone
 33 to bias and more objective evidence may be provided by other indicators such as frequency

1 of sick leave and job turnover figures. These may have provided a different perspective on
2 the prevalence of compassion fatigue.

3 CONCLUSION

4 Although the body of research on compassion and compassion fatigue as an individual
5 concept continues to grow, this study highlights the paucity of studies outside of the USA
6 that examine this within emergency nurses. This Australian based study assists extension of
7 this knowledge internationally. There is a need for further studies to be conducted
8 internationally to obtain more information about this phenomenon within emergency nurses.
9 Results revealed a balance in professional quality of life in regard to the positive factor
10 Compassion Satisfaction and the negative factor Compassion Fatigue (BO and STS). A
11 balance in these emotional factors may help to sustain employees in their work. In addition,
12 Emergency specific nursing education may be influential in raising levels of Compassion
13 Satisfaction and further exploration of this avenue is necessary. Senior nurses may be a
14 pivotal factor in assisting newer, more vulnerable nurses to improve their professional quality
15 of life. Thus, organisations, managers and individual nurses need to provide support for
16 emergency nurses to improve Compassion Satisfaction and prevent Burnout and Secondary
17 Traumatic Stress.

20 Acknowledgement

21 Not applicable.

22 Contributions

23 All authors contributed to (1) the conception and design of the study, or acquisition of data,
24 or analysis and interpretation of data, (2) drafting the article or revising it critically for
25 important intellectual content, (3) final approval of the version to be submitted.

26 Disclosures

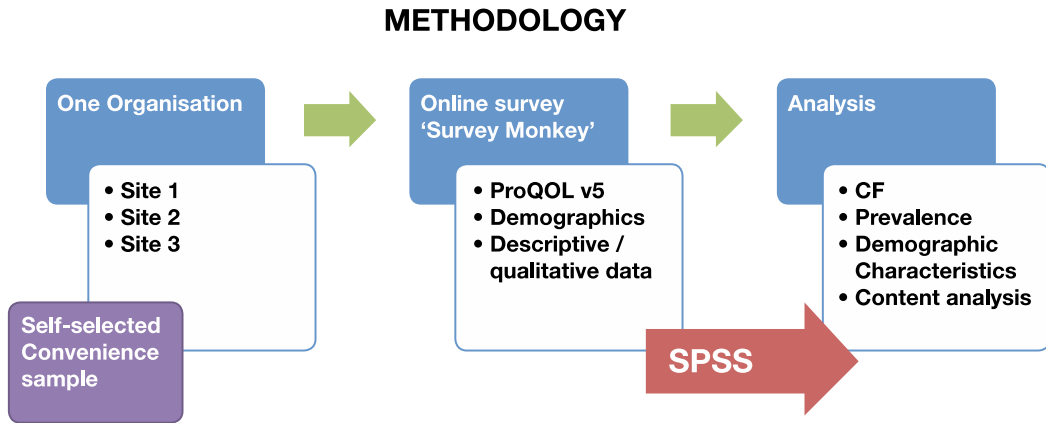
27 The authors declare they have no conflict of interest.

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2 **Figure 1. Methodology of study**

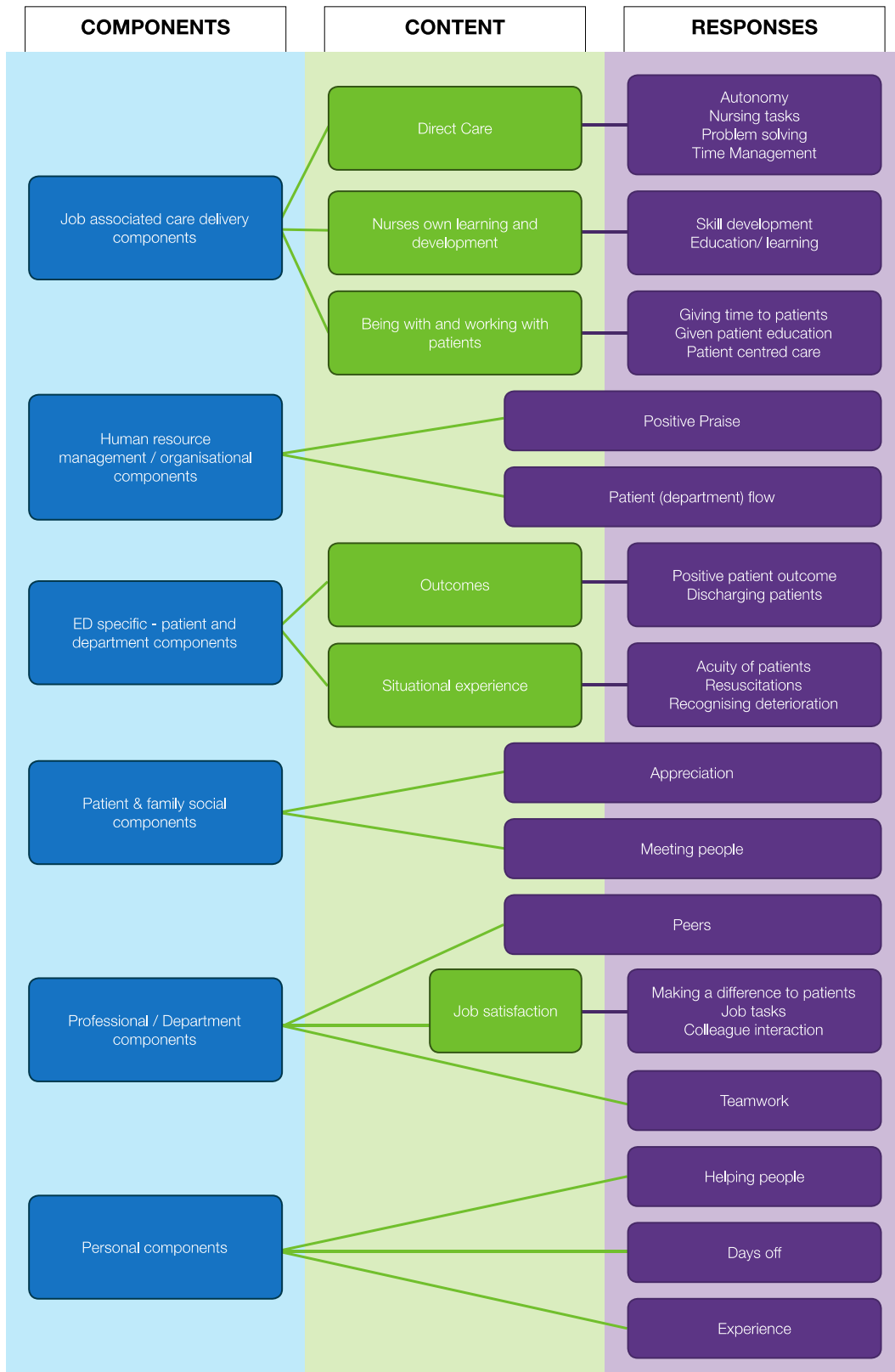
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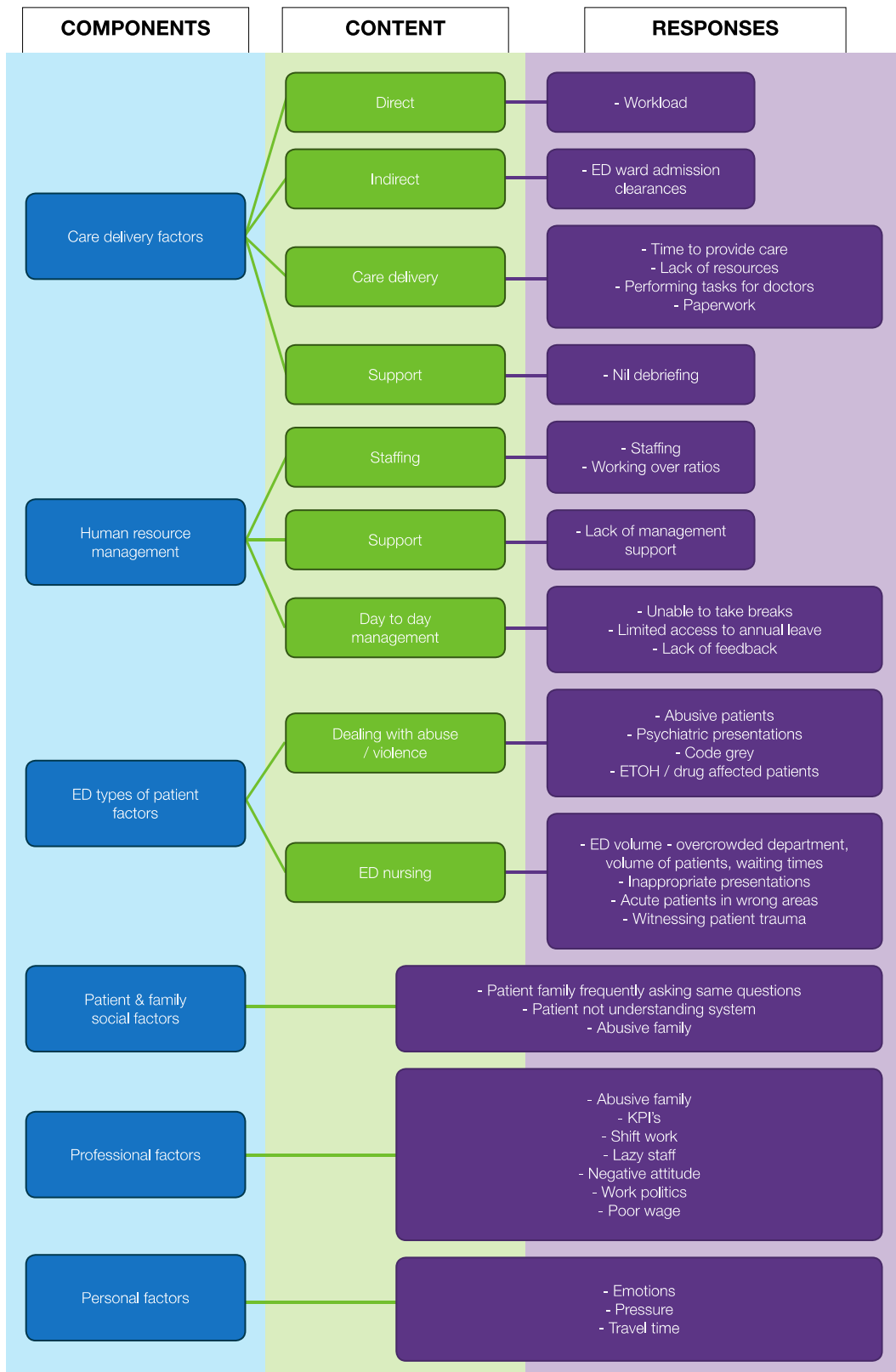
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1 **Figure 2. Rewarding issues at work**



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1 **Figure 3. Exhausting issues at work**



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1 Title page [Int Emerg Nurs](#)

2 **COMPASSION SATISFACTION AND COMPASSION FATIGUE IN AUSTRALIAN**
3 **EMERGENCY NURSES: A DESCRIPTIVE CROSS-SECTIONAL STUDY**

5 Short title: Compassion in Emergency Nurses

19 Corresponding Author:

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- 2 Conflict of Interest
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- 7 4 Ethical Statement
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- 9 5 Funding Source
- 10
- 11 6 This research did not receive any specific grant from funding agencies in the public,
- 12
- 13 7 commercial, or not-for-profit sectors.
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1 COMPASSION SATISFACTION AND COMPASSION FATIGUE IN EMERGENCY NURSES: 2 A QUANTITATIVE CROSS-SECTIONAL STUDY

3 **Abstract**

4 Introduction

5 Emergency nurses are at risk of compassion fatigue. Compassion fatigue caused by
6 exposure to suffering may compromise the individual's personal wellbeing and reduce work
7 efficiency.

8 Methods:

9 A quantitative cross-sectional survey with open responses was conducted using the
10 Professional Quality of Life: Compassion Satisfaction and Compassion Fatigue (ProQOL)
11 scale and open-ended questions. Responses from a convenience sample of 86 nurses from
12 two hospital emergency departments in Victoria, Australia, were analysed.

13 Results:

14 The median score for Compassion Satisfaction was 78% with all nurses reporting average to
15 high scores. Most had average levels of Compassion Fatigue: Burnout median score was
16 53% and Secondary Traumatic Stress median score 49%. No statistically significant
17 correlation was found between scales nor with influencing demographic characteristics. A
18 qualification in emergency nursing was predictive of Compassion Satisfaction. Six
19 descriptive job-associated factors contributed to nurses' stress: human resources, the
20 organisation, job-specific components, patient mix and professional and personal
21 components.

22 Conclusion/s:

23 Average to high levels of Compassion Satisfaction and low to average levels of Compassion
24 Fatigue were found in emergency nurses. Issues contributing to stress were work and role
25 related. An understanding of these stressors may help nurses and nurse managers to
26 ameliorate emergency nurses' levels of stress and help limit staff burnout.

27 *Keywords*

28 Burnout; compassion satisfaction, compassion fatigue; emergency department; emergency
29 nurses; secondary traumatic stress.

1 INTRODUCTION

2 Nurses are known to be at risk of compassion fatigue owing to the stresses of caring for
3 patients who are in significant emotional pain and physical distress (1, 2). This study
4 explores the level of compassion felt by Australian emergency nurses. It is recognised that
5 the degree of compassion in nurses working in speciality practice can affect the quality of
6 patient care, organisational capacity, staff retention and nurses' general wellbeing (3). While
7 the study setting is in Australia it is likely that compassion fatigue and stress is something
8 that emergency nurses worldwide experience, therefore the design and findings of the study
9 may be useful internationally.

10 Emergency nurses are working at the front line between the community and the hospital
11 setting (4). They often need to deal with complex patient loads, long shifts, demanding
12 physicians and a fast-paced environment. Nurses are routinely exposed to the acute and
13 first stages of illness and injury and are paramount in the critical work of resuscitating
14 patients. Emergency nursing work is described as being emotionally and physically
15 challenging (5, 6). Among numerous studies of nurses' caring and compassion, the majority
16 have explored compassion fatigue and stress as an important antecedent to lack of retention
17 of nurses (7-9).

18 As in other countries, with the aging of the Australian population, emergency patient
19 presentations are increasing in complexity and demand within emergency departments is
20 growing (10). Studies show that emergency nurses are under increase time pressures both
21 internationally (11-13) and in Australia (14). They face greater physical demands, greater
22 patient expectations and have lower decision authority and less adequate work procedures
23 than those nurses working in other departments. Emergency nurses are increasingly
24 exposed to aggressive behaviour and patient violence (15). The results of an Australian
25 study reveal that younger age nurses and those without post-graduate qualifications may be
26 more likely to experience stress, for 20% of 132 nurses surveyed in a tertiary hospital had
27 elevated levels of compassion fatigue (16).

28 Professional quality of life is described as having both positive elements (compassion
29 satisfaction) and negative elements (compassion fatigue) (17). The key terms that are used
30 throughout this paper are described in Table 1.

1 Table 1 Descriptors for key terms

| KEY TERM | DESCRIPTION |
|---------------------------------|--|
| Compassion Satisfaction (CS) | The positive feelings derived from helping others through traumatic situations. |
| Compassion Fatigue (CF) | A combination of physical, emotional, and spiritual depletion associated with caring for patients in significant emotional pain and physical distress. According to Stamm, 2010 (17) this comprises two compassion fatigue elements: Burnout and Secondary Traumatic Stress. |
| Burnout (BO) | A cumulative state of frustration with a person's work environment that develops over a long time. |
| Secondary Traumatic Stress STS) | Stress related to negative feelings resulting from fear and work-related trauma. |

2 Source: Stamm, 2010 (17); Figley,1995 (1)

3

4 According to Stamm, 2010 (17), maintaining a balance between these positive and negative
 5 aspects of caring can help sustain employees' morale in their workplace. Many studies have
 6 used the Professional Quality of Life: Compassion Satisfaction and Compassion Fatigue
 7 (ProQOL) measure to examine compassion (17). This instrument was developed by Figley
 8 and Stamm from 1995 with a sample of 463 people. Compassion Satisfaction items were
 9 derived from the positive and altruistic aspects that people take from their work and
 10 Compassion Fatigue comprised the negative aspects. Compassion Satisfaction and
 11 Compassion Fatigue are conceptual opposites and are not co-related. Compassion Fatigue
 12 comprises two independent subscales: Burnout and Secondary Traumatic Stress. The
 13 validity and reliability of the scales was previously established, including through publication
 14 of over 200 papers and instrument reliability data (17). In regard to compassion, the
 15 pressures and contextual surroundings of emergency work may place emergency nurses at
 16 risk of having more compassion fatigue than compassion satisfaction (11, 12, 18, 19). It is
 17 therefore important that the positive emotional aspects such as compassion satisfaction be
 18 encouraged while compassion fatigue should be recognised and addressed. Despite
 19 worldwide studies related to nurses' levels of compassion satisfaction and compassion
 20 fatigue, there is very little information about these levels within emergency nurses. Studies
 21 regarding this in emergency nurses have mainly been undertaken in the USA.

22 Given that little is known about the compassion status of emergency nurses internationally
 23 and nationally, and that much other evidence is dated, this study aimed to conduct a cross-
 24 sectional survey to examine the current situation in two Australian emergency departments.

25

METHODS

The design is a cross-sectional observational descriptive study incorporating quantitative data (Figure 1) and descriptive participant responses. The research questions to be answered are: (a) What is the prevalence of Compassion Satisfaction (CS) and Compassion Fatigue (CF) in Emergency Nurses?; (b) What demographic factors correlate with Compassion Satisfaction and the Compassion Fatigue subscales: Burnout (BO) and Secondary Traumatic Stress (STS), and (c) What themes emerge when emergency nurses are asked open-ended questions regarding satisfying or exhausting/draining components of emergency work?. The study reporting aligns with the STROBE checklist for reporting observational studies (20).

INSERT Figure 1 about here: Methodology

Sample and Setting

Emergency nurses were sampled from the emergency departments in two major metropolitan acute care hospitals in Melbourne, Australia. Together, these departments have 110 beds and manage approximately 220,000 emergency presentations per year to service 17% of the state's population (21).

All permanently employed registered nurses and enrolled nurses working in one of the two emergency departments were invited to participate in the study (approximately 235 staff). Study information and an invitation to participate was distributed by nurse unit managers, inviting completion of an online questionnaire. The survey was open for six weeks in 2015 and two reminder messages were sent.

Instrumentation

The online questionnaire comprised three components: a demographic survey, the Professional Quality of Life (ProQOL v5) scale (17) and two open-ended questions. The demographic online survey asked about participants' age, gender, qualifications, nursing experience, race, ethnicity, current job status, and role.

The ProQOL 5 instrument is a 30-item self-report measure, anchored by a five-point Likert scale (17). This was chosen because of its ability to measure compassion satisfaction and compassion fatigue as individual concepts to describe the positive and negative effects on nurses of experiencing secondary trauma through seeing the suffering of patients.

Participant perceptions are relative to nurses' experiences in the last 30 days.

1 This validated instrument has been widely used to self-report compassion (17), including in
2 nurses (6, 8, 11, 22, 23). As mentioned earlier, the instrument comprises three subscales
3 (CS, BO and STS), with the psychometric properties such as internal validity having been
4 variously reported in many studies. Stamm (17) reports the reliability of the three scales
5 ranges from α 0.84 to 0.90 and that correlations between scales showed only 2% shared
6 variance ($r = -0.14$; $\text{co-}\sigma = 2\%$; $N = 1,187$) with CF and 5% shared variance with BO ($r =$
7 -0.23 ; $\text{co-}\sigma = 5\%$; $N = 1,187$), thus, indicating that the scales are separate entities.

8 Each subscale has 10 question items based on a five-point response scale of 1 (never) to 5
9 (very often) (17). The current study outcomes were achieved by totalling the ProQOL 5
10 scores for each subscale and ranking total scores according to Stamm's levels of evidence.
11 For CS: a score of ≤ 22 denotes low levels of CS; 23–41 indicates average levels, and ≥ 42
12 indicates high levels. For CF-BO: a score of ≤ 22 indicates low levels, 23–41 indicates
13 average levels, and ≥ 42 reveals high levels of CF. For CF- STS: the same ranking applies.

14 The instrument's reliability in the current study was satisfactory, as indicated by Cronbach's
15 alpha 0.86 for Compassion Satisfaction (CS), 0.80 for Burnout (BO) and 0.72 for Secondary
16 Traumatic Stress (STS). Cronbach's alpha shows the internal consistency, a form of
17 reliability. It shows correlations between items of the same attribute (24).

18
19 Additionally, two open-ended questions were posed in the online survey: (i) What do you find
20 rewarding / successful at work? (ii) What do you find draining / exhausting at work? The
21 survey and additional questions were administered electronically, using SurveyMonkey
22 (surveymonkey.com).

23 Data analysis

24 Questionnaire data were downloaded and analysed using the software IBM-SPSS version
25 23.0 (25). The results were collated and analysed according to the ProQOL 5 instructional
26 manual (Stamm, 2010). It was noted that each of the three scales comprising 10 items is
27 scored out of a maximum of 50 points. The negatively posed response items 1, 4, 15, 17,
28 and 29 were reverse-coded as required. Demographic characteristics were analysed
29 descriptively to explore summary data (total number, mean, median and range), as were the
30 three ProQOL scales. Correlations between ProQOL scales' total scores and demographic
31 characteristics were assessed with use of Pearson's Product Moment Correlation co-efficient
32 applied to the interval and dichotomous variables; t -tests and ANOVA were conducted where
33 relevant. A p -value of <0.05 was considered statistically significant for all tests.

1 A hierarchical multiple regression analysis was conducted to test for variables that may
2 predict Compassion Satisfaction. After confirming data suitability, firstly, the independent
3 variable 'department' (comprising A and B) was added in order to statistically control for any
4 difference in responses of staff between departments. Second, seven other independent
5 variables (listed in Table 3) were transformed into suitable dichotomous or interquartile
6 formats and were added to the equation to be tested. The analysis conducted was guided by
7 the method of Pallant (26).

8 Open ended questions were categorised using descriptive content analysis. Three
9 researchers independently coded the questions and results were combined and agreed
10 collaboratively.

11 Ethics approval

12 The project was approved by the Human Research Ethics Committee, (approval no.14348L)
13 (*blanked for anonymous review*) and the Human Research Ethics Committee, (approval no.
14 14/3957).

15 Implied consent was obtained by completion of the survey. Emotive issues raised on
16 distribution and completion of the survey were pre-empted. Details for national helplines and
17 emotional support were provided in the survey.

18 RESULTS

19 Response data from n = 86 emergency nurses were analysed (three were incomplete and
20 were removed). The response rate was approximately 38%.

21 Demographics

22 Most participants were female (91%; n= 78) and 7% (n= 6) were male and 2% (n=2)
23 participants did not report gender. Their ages ranged between 18 and 61 years. Half (56%)
24 were aged less than 30 years, 26% were aged 31-40 and 16% were aged >41 years. Most
25 nurses (81%) were born in Australia and 76% reported Australian ethnicity (and 18% Asian
26 or European). Their average years of nursing experience was 10.2 (SD: 9.14), ranging from
27 one to 48 years. The average length of Emergency Department experience was 7.0 (SD =
28 7.4) years with a range spanning one year to 41 years. For 24%, employment involved full-
29 time work and 76% worked part-time. Most nurses (77%; n=66) had completed specialist
30 training in emergency nursing (such as a certificate or diploma) in addition to their nursing
31 entry-level qualification.

INSERT TABLE 2 ABOUT HERE Interpreted Compassion Satisfaction and
Compassion Fatigue scores

Table 2 Interpreted Compassion Satisfaction and Compassion Fatigue scores

| Domain and Element | Low score n (%) | Average score n (%) | High score n (%) |
|--|--------------------|---------------------------|---------------------|
| Compassion Satisfaction (M= 38.3 (SD 5.0); Md 39, range 23-47) | 0 (0.0) | 63 (73.3) | 23 (26.7) |
| Compassion Fatigue | | | |
| Burnout (M= 26.6 (SD 5.4); Md 26.5, range 16-40). | 20 (23.3) | 66 (76.7) | 0 (0.0) |
| Secondary Traumatic Stress (M= 24.6 (SD 4.5); Md 24.5, range 12-37). | 27 (31.4) | 59 (68.6) | 0 (0.0) |

Legend: M= mean; Md = median, SD = standard deviation. Total possible score is 50 points for each scale and subscale; the quality range for the transformed scores according Stamm 2010 (p 28-30) (17) is low score = ≤ 22; average score is 23-41; high score is >42.

Compassion

Compassion Satisfaction scores were all average to high. As presented in Table 2, of a possible total score of 50 points, 73.3% had an average score, 26.7% a high score and none had a low score.

Compassion Fatigue is measured by two independent subscales: Burnout and Secondary Traumatic Stress. Results revealed low levels of Burnout for 22.3%; average levels for most participants (76.7%) and none recorded high levels. These low to average scores proved similar to those for stress. Scores for Secondary Traumatic Stress showed almost one-third (31.4%) reported low levels, two-thirds (68.6%) had average levels and none had a high level.

1 Associations between variables

2 Pearson's correlation and *t* tests were used to identify relationships between demographic
3 variables and Compassion Satisfaction, Burnout and Secondary Traumatic Stress. There
4 was a non-significant correlation between the three scales, confirming the instrument's
5 internal validity claim of independence. Although there were some differences between
6 compassion scale responses and nurses' demographic variables, none of these reached a
7 level of significance. The only trends noted were in CS which appeared higher in the smaller
8 department B and STS appeared lower; plus increasing CS in nurses as they aged: 31-40
9 year-olds had a score of 37.1 and those ≥ 41 years scored 39.2. There was no significant
10 correlation of any of the three scales with an individual demographic variable ($p = >0.05$),
11 suggesting that this study may not be sufficiently powered to identify differences.

12 Hierarchical multiple regression was used to further explore relationships between the
13 variables that may predict nurses' coping evidenced by Compassion Satisfaction. After
14 controlling for the department setting (department A or B), regression revealed a significant
15 model and a relationship between emergency nursing education and Compassion
16 Satisfaction. The main independent contributor to the model was participants' ED-specific
17 nursing education (beta 0.269, $t = 3.320$, $p = 0.001$). As seen in Table 3, two additional
18 measures (religiosity and ethnicity) accounted for a small part of the variance. The
19 Compassion Satisfaction model, as a whole, could significantly predict 97.3% of the variance
20 in compassion satisfaction ($R^2 = .973$, $F = (4, 76) = 63.862$, $p = 0.000$).

21 **Table 3** Predictors of Compassion Satisfaction

| MODEL | | Standardized | | Sig. |
|-------|--|--------------|----------|------|
| | | Beta | <i>t</i> | |
| 1 | Emergency Department A or B | .939 | 24.296 | .000 |
| 2 | Emergency Department A or B | .175 | 3.199 | .002 |
| | Specialist training in Emergency Nursing Yes/No | .269 | 3.320 | .001 |

| | | | |
|--|-------|-------|------|
| Religious belief Yes/No | .198 | 3.488 | .001 |
| Ethnicity – Aust or NZ/ /Caucasian, or Asian | .152 | 2.596 | .011 |
| NO IMPACT: | | | |
| Employment status Fulltime/Part-time | .174 | 1.881 | .064 |
| Age: 18-30 /31-40/ >41 years | -.011 | -.226 | .822 |
| Nurse with postgrad Cert/Dip/Degree Yes/No | .033 | .472 | .638 |
| Years in nursing: quartiles 4/7/12 | .032 | .456 | .650 |

2 Descriptive findings

3 Content analysis of nurses' open-text responses revealed further impacts of the work
 4 environment. Eighteen participants designated the most common rewarding and satisfying
 5 issue at work in emergency as 'job satisfaction'. Seventeen thought that 'helping vulnerable
 6 people' was rewarding. These caring elements of nursing are likely to influence compassion
 7 satisfaction. Positive professional components such as 'making a difference', 'job tasks' and
 8 'collegial interactions' were also common responses that were posited as rewarding (Figure
 9 2).

10 **INSERT FIGURE 2 (rewarding components) HERE**

11 **INSERT FIGURE 3 (exhausting components) HERE**

12
 13 The 'draining and exhausting' components comprised 'care delivery', 'human resource
 14 management', 'emergency patient type', 'patient and family social components', and
 15 'professional and personal components' (Figure 3). The lead extenuating factor suggested
 16 as relating to compassion fatigue was 'workload'. This could be quantified as the most
 17 influential factor, with over one-third of the nurses (37%; n=33) identifying this as the key
 18 cause of exhaustion. This was followed by 'emergency patient volume' (n = 20, 22.4%) and
 19 'abusive patients' (n = 14, 15.7%) as contributors to exhaustion. Further exploration of the
 20 work environment components seen as rewarding or exhausting is presented in Figure 2 and
 21 Figure 3.

1 DISCUSSION

2 Nurses working in the surveyed emergency departments were found to have average and
3 high levels of compassion satisfaction and average to low levels of compassion fatigue. An
4 average compassion satisfaction was revealed by 73% and a high level by 24%. Burnout
5 was low to average in this cohort (BO: 23.3%, 76.7% respectively); none had high levels.
6 Similarly, Secondary Traumatic Stress was limited to low and average scores (STS: 31.4%;
7 68.6%). This reflects a good balance of the positive factor CS with the negative factor CF,
8 which is required to maintain nurses' resilience and prevent compassion fatigue (9). As
9 expected, there was no correlation between the positive element CS and the negative
10 element CF, suggesting the instrument ProQOL 5, had correctly captured the figure.

11 Although there was no Australian study identified to enable a direct comparison, our findings
12 concur with much of the literature from the USA. Similar to our study, Flarity et al. (9) used
13 the ProQol 5 in investigating the effectiveness of an educational program on compassion
14 fatigue for n = 59 emergency nurses in Colorado, USA. They reported median scale values
15 were average to high for CS (Md = 42), low to average for BO (Md = 23), and low to average
16 for STS (Md 24), which reflect our findings. They noted significant positive changes in
17 compassion after a 4-hr educational intervention for emergency nurses.

18 Hunsaker et al (2015) who surveyed 284 emergency nurses across USA using the ProQOL
19 also reported average to high levels of compassion satisfaction and low to average levels of
20 compassion fatigue and burnout. In their study, 56.8% of the emergency nurses had an
21 average level of CS, 65.9% were in the low level of CF, and 54.1% were in the average level
22 of burnout. Furthermore, similar to our study, older emergency nurses had significantly
23 higher CS than younger nurses. They also showed that younger nurses reported higher CF
24 (STS and BO).

25 A study of n = 221 critical care nurses surveyed in a large USA medical centre showed that
26 all three ProQOL subscale scores were within the average range (Sacco, Ciurzynski et al.
27 2015). However, group and individual findings in the CS and CF measures differed
28 significantly. Differences were found in CS by sex, age, acuity level and management
29 change. Notably and in contrast to our findings, nurses 40 to 49 years old had significantly
30 *lower* CS ($p = .03$) than did nurses in other age groups. Differences were found in CF by
31 age, acuity and management change.

32 All three of these studies conducted within the last five years indicate that nurses in these
33 specialty areas have recorded average-high compassion satisfaction and are not commonly
34 exposed to high levels of compassion fatigue (measured as burnout and secondary
35 traumatic stress) that may result from their experiences of seeing the pain and suffering of

1 patients. In all these studies, there was some evidence that younger and less experienced
2 nurses were at greater risk for stress while older and more experienced nurses were better
3 adjusted with higher satisfaction. In line with the logical explanation, a recently published
4 meta-analysis included data from 21 studies together with other recent research evidence
5 suggested that education and training may have a moderating effect on compassion fatigue
6 and burnout (27-30). A study by Von Rueden, 2010 (31) also found that secondary traumatic
7 stress was more prevalent in younger nurses (31). The literature, however, can be conflicted
8 as some earlier dated studies have noted high levels of burnout and stress. Hooper et al.,
9 2010 (11) who surveyed 49 emergency nurses and 65 nurses in other selected departments
10 in South Carolina USA in 2008, reported that 82% of emergency nurses had moderate to
11 high levels of burnout, and around 86% had moderate to high levels of compassion fatigue.
12 Physical symptoms and emotional symptoms are among recognisable trigger factors (32).

13 Past studies have explored a lack of job satisfaction and presence of burnout as key
14 antecedents of nurse turnover (11, 16). It may be that our present results indicate that
15 emergency nurses are adequately educated and well supported by managers and effective
16 organisational processes; to enable functioning despite the trauma and suffering they see in
17 their environment. Notably, our study participants were well educated with 77% reporting
18 completion of a specialty emergency nursing qualification in addition to entry level nursing
19 requirements. Specialty education may impact emotional preparedness for emergency
20 nursing, as may the length of emergency nursing experience.

21 Nursing is often regarded as synonymous with compassion and caring qualities. The
22 Unabridged Random House Dictionary defines compassion as "a strong desire to alleviate
23 the pain or remove its cause" (33). This is often a motivation for people to study nursing.
24 Compassion satisfaction is recorded as the positive aspects of caring that balance out the
25 negative aspects of exposure to human illness and suffering (34). Burnout, the alternative
26 emotional state, encompasses emotional exhaustion, depersonalization and negative
27 attitudes to patient suffering, with lessened feelings towards achievements (35). It may be
28 that in studies whose results oppose ours, where nurses' burnout is high, compassion
29 satisfaction is low. The consequence is that because emotional distress affects job retention,
30 staff numbers may be impacted with one study finding that 23% of nurses who were
31 stressed planned to leave their job within one year (36). It is difficult to measure compassion
32 fatigue without also knowing that an individual's work provides compassion satisfaction. In
33 this regard, the current study provides valuable insights.

34 Finally, we refer to the 'Discovery' components of the workplace environment that were
35 posited as new findings that have not been previously explored in research. These are:

- 1 • job associated care delivery
- 2 • human resource management
- 3 • emergency specific patients
- 4 • patient and family social factors
- 5 • professional factors
- 6 • personal factors

7 These components reflect both rewarding and exhausting work experiences. These need to
 8 be considered in the context of emergency nursing. There is a need to further explore factors
 9 that assist emergency nurses in their role and also those that form a barrier to compassion,
 10 such as time pressures, emergency volume and abusive patients. Health organisations
 11 should focus on creating systems that will enhance staff wellbeing and reduce the
 12 occurrence of BO and SCC in the healthcare workforce. These could be through providing
 13 staff general well-being training such as resilience training. By maintaining nurses' physical
 14 and mental health, it will enhance their performance and optimise the quality of clinical care.

15 Managers play an important role in supporting emergency nurses, for a change in manager/
 16 management was found to be one of the threats to nurses' compassion satisfaction (23).
 17 Previous studies in this regard described four influencing components: environmental,
 18 organisational, professional and personal components. In Australia, Drury et al., 2014 (37)
 19 found that a nurse's capacity to cope can be enhanced through strong social, collegial
 20 support and infrastructure that supports the provision of quality nursing care and positive
 21 affirmation. From a survey of n = 491 direct care nurses in USA, Kelly et al., 2015 (38)
 22 suggest that meaningful recognition may increase compassion satisfaction, positively impact
 23 retention, and elevate job satisfaction.

24

25 Limitations

26 Several limitations of the study design are acknowledged. A convenience sample in the
 27 invited population may not represent all emergency nurses and therefore results should be
 28 interpreted with caution. It is possible that the respondents self-selected to participate
 29 because they were nurses who have manageable burnout and low stress levels. These
 30 respondents may have other intrinsic physical or mental strength to better manage their
 31 stress level compared to those non-respondents. Owing to the small sample, the design
 32 may have been underpowered to detect response differences. Self-report surveys are prone
 33 to bias and more objective evidence may be provided by other indicators such as frequency

1 of sick leave and job turnover figures. These may have provided a different perspective on
2 the prevalence of compassion fatigue.

3 CONCLUSION

4 Although the body of research on compassion and compassion fatigue as an individual
5 concept continues to grow, this study highlights the paucity of studies outside of the USA
6 that examine this within emergency nurses. This Australian based study assists extension of
7 this knowledge internationally. There is a need for further studies to be conducted
8 internationally to obtain more information about this phenomenon within emergency nurses.
9 Results revealed a balance in professional quality of life in regard to the positive factor
10 Compassion Satisfaction and the negative factor Compassion Fatigue (BO and STS). A
11 balance in these emotional factors may help to sustain employees in their work. In addition,
12 Emergency specific nursing education may be influential in raising levels of Compassion
13 Satisfaction and further exploration of this avenue is necessary. Senior nurses may be a
14 pivotal factor in assisting newer, more vulnerable nurses to improve their professional quality
15 of life. Thus, organisations, managers and individual nurses need to provide support for
16 emergency nurses to improve Compassion Satisfaction and prevent Burnout and Secondary
17 Traumatic Stress.

20 Acknowledgement

21 Not applicable.

22 Contributions

23 All authors contributed to (1) the conception and design of the study, or acquisition of data,
24 or analysis and interpretation of data, (2) drafting the article or revising it critically for
25 important intellectual content, (3) final approval of the version to be submitted.

26 Disclosures

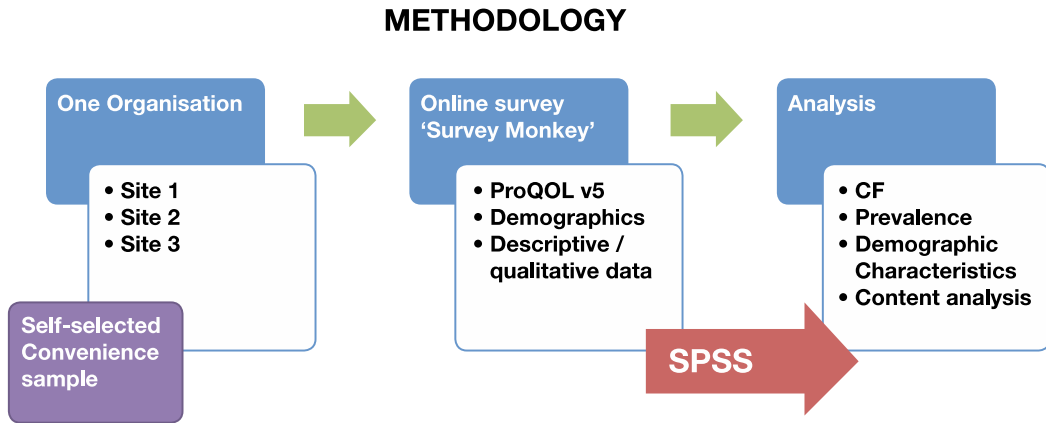
27 The authors declare they have no conflict of interest.

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2 **Figure 1. Methodology of study**

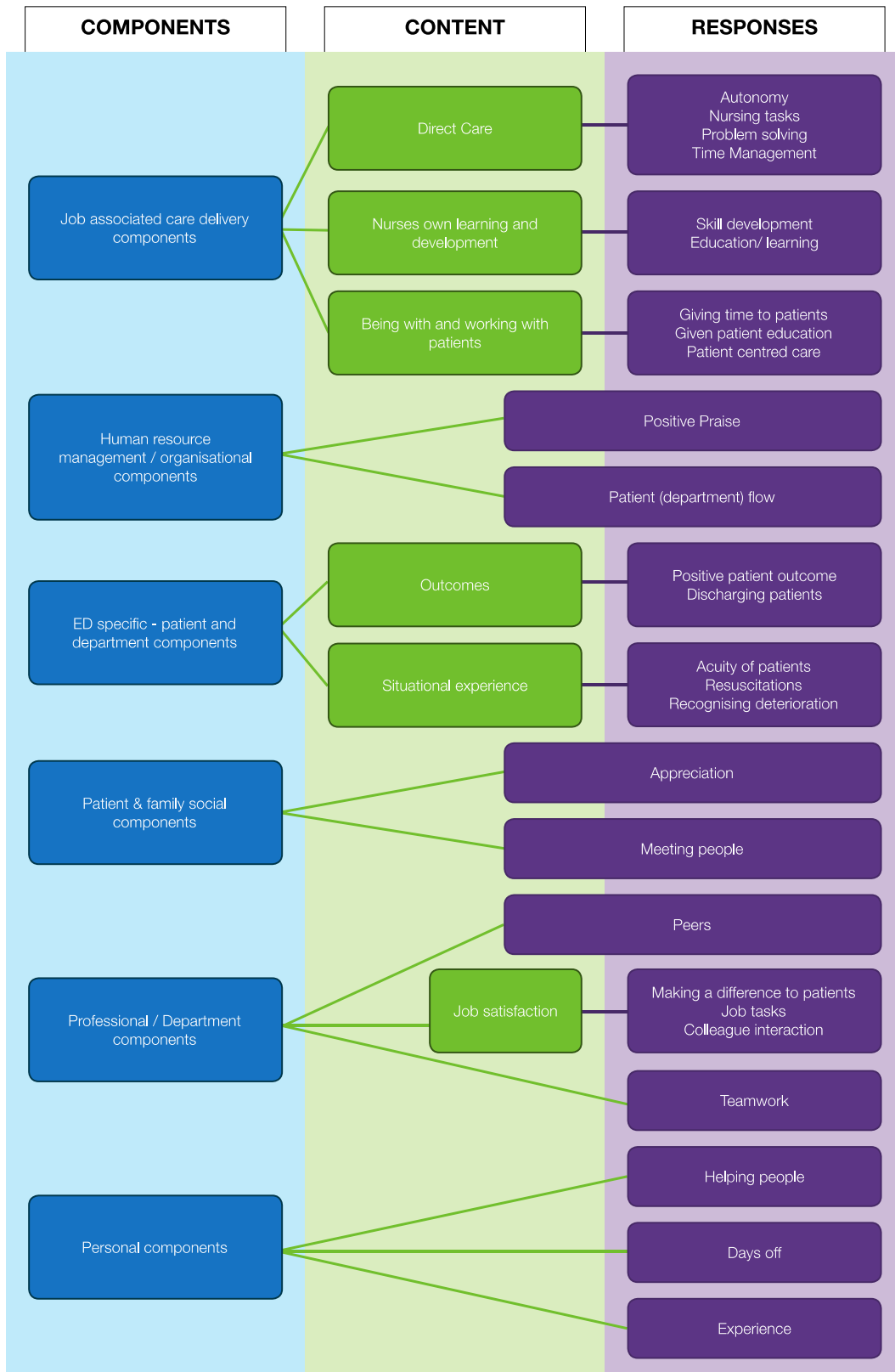
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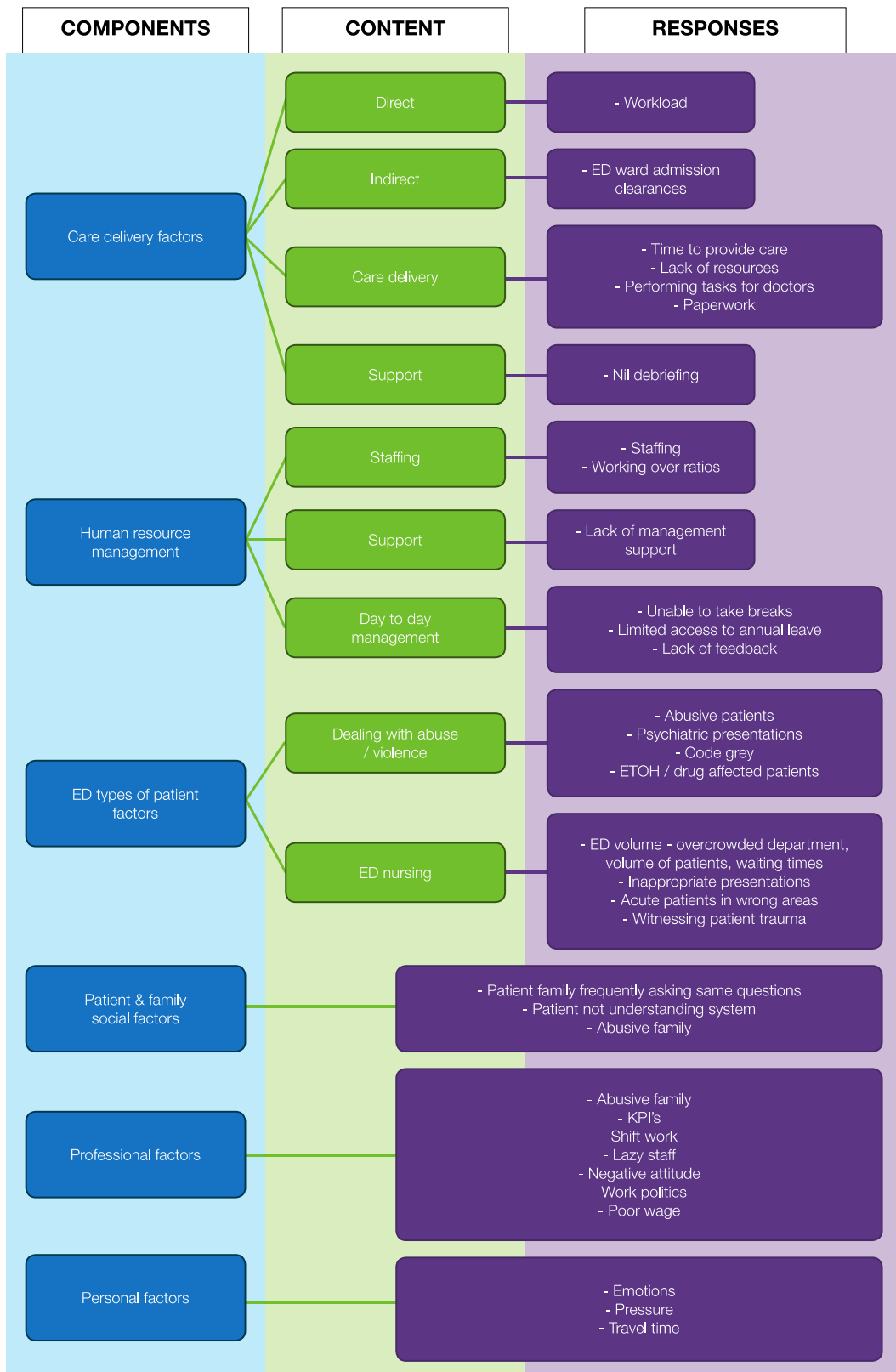
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1 **Figure 2. Rewarding issues at work**



2

1 **Figure 3. Exhausting issues at work**



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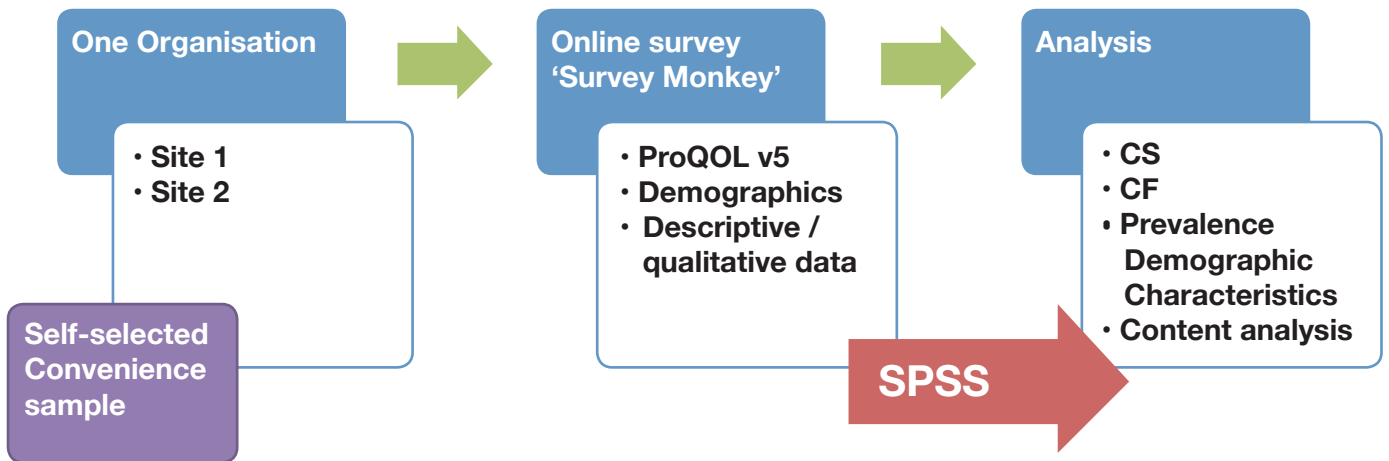
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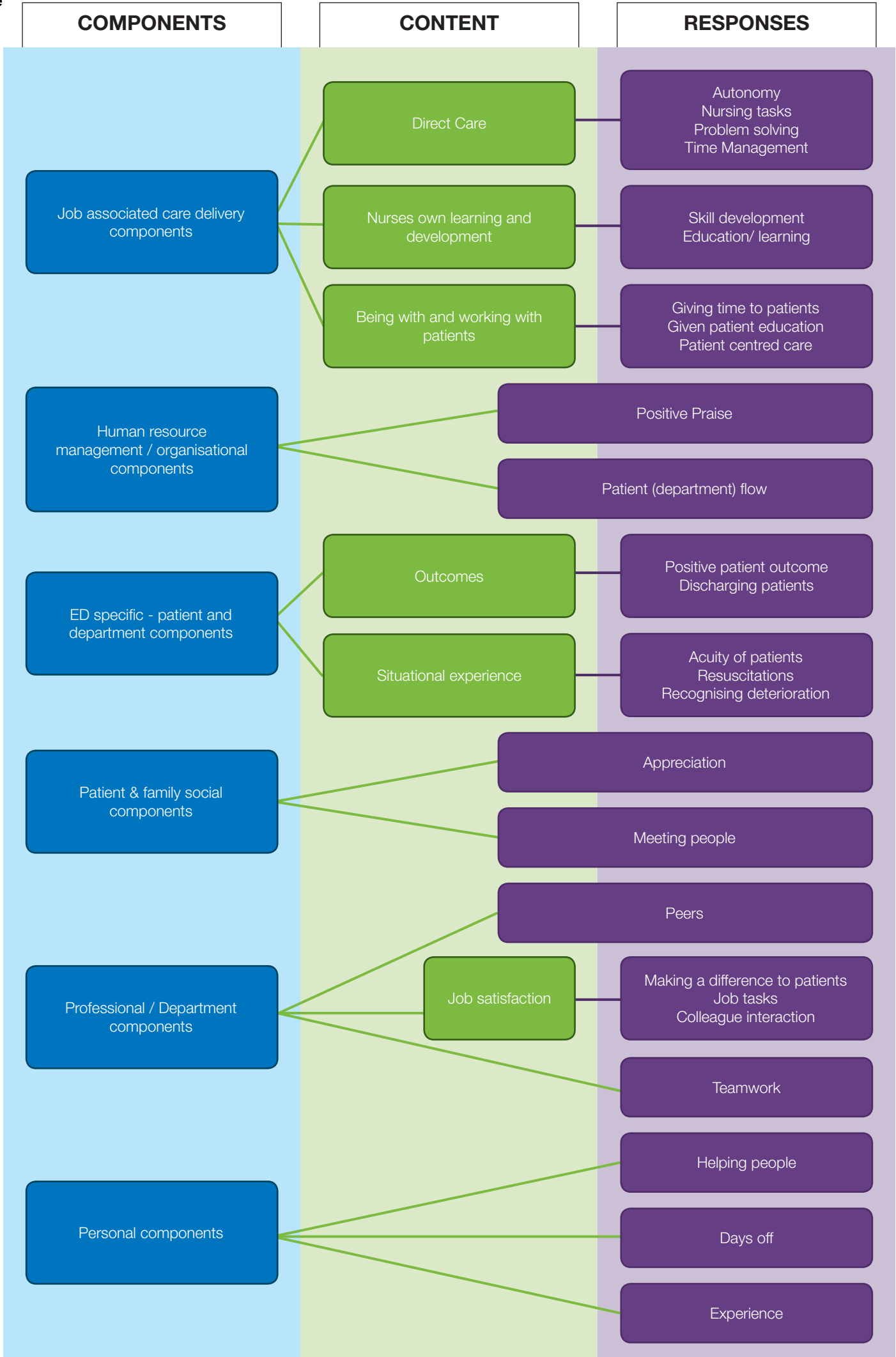
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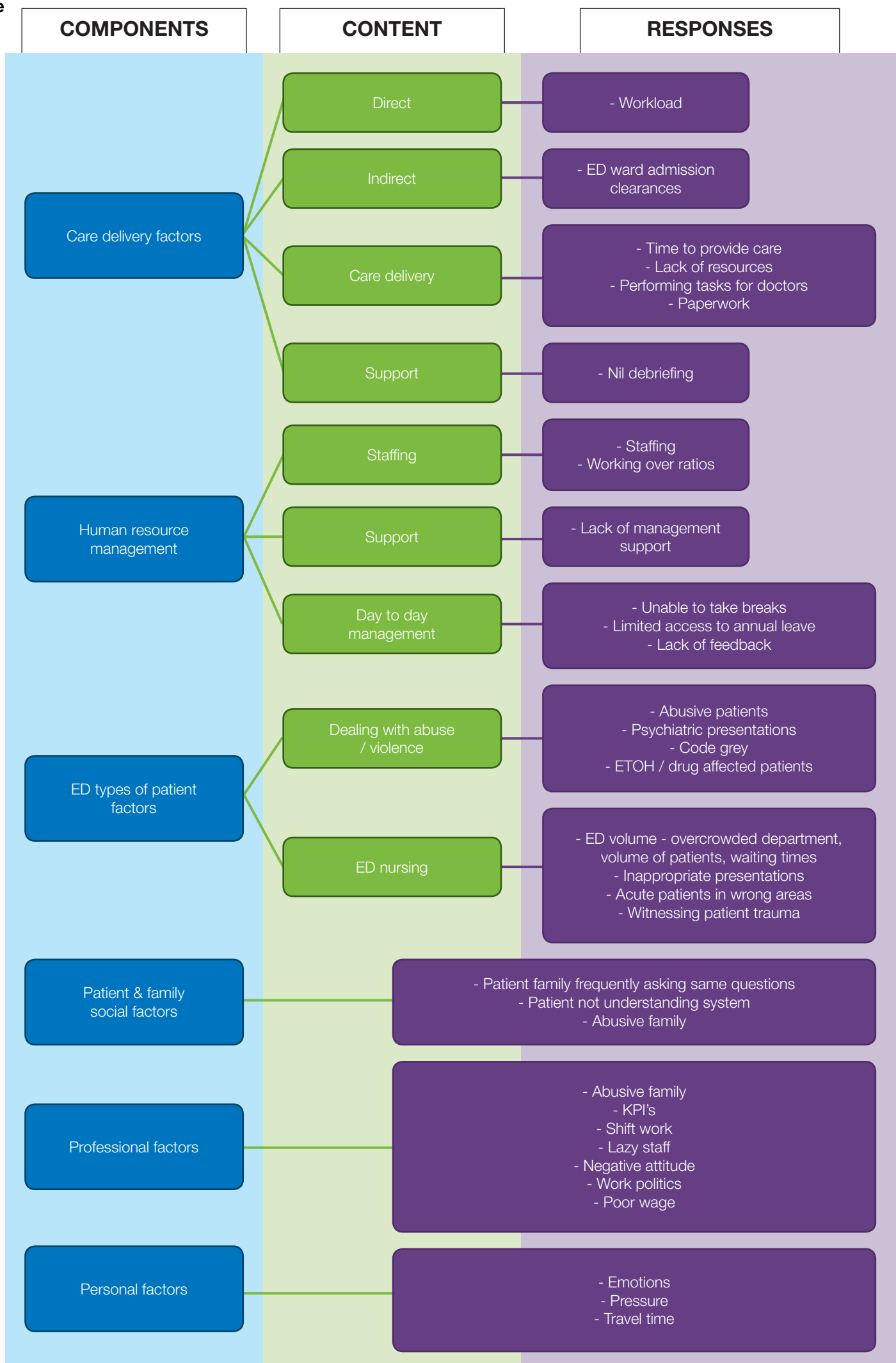
METHODOLOGY



Figure



Figure



1 [Highlights \(separate file\)](#)

- 2 • Emergency nurses' levels of compassion were surveyed.
- 3 • Emergency nurses had average to high levels of Compassion Satisfaction.
- 4 • Compassion Fatigue was low to average.
- 5 • 'Helping vulnerable people' and 'job satisfaction' were the most rewarding.
- 6 • Emergency nurses workload was seen as the most exhausting issue.

STROBE Statement—Checklist of items that should be included in reports of *cross-sectional studies*

| | Item No | Recommendation | Page No |
|------------------------------|---------|--|---------|
| Title and abstract | 1 | (a) Indicate the study’s design with a commonly used term in the title or the abstract | 3 |
| | | (b) Provide in the abstract an informative and balanced summary of what was done and what was found | 3 |
| Introduction | | | |
| Background/rationale | 2 | Explain the scientific background and rationale for the investigation being reported | 4 |
| Objectives | 3 | State specific objectives, including any prespecified hypotheses | 5 |
| Methods | | | |
| Study design | 4 | Present key elements of study design early in the paper | 6 |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | 6 |
| Participants | 6 | (a) Give the eligibility criteria, and the sources and methods of selection of participants | 6 |
| Variables | 7 | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable | 6 |
| Data sources/ measurement | 8* | For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group | 6-7 |
| Bias | 9 | Describe any efforts to address potential sources of bias | NA |
| Study size | 10 | Explain how the study size was arrived at | NA |
| Quantitative variables | 11 | Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why | 7-8 |
| Statistical methods | 12 | (a) Describe all statistical methods, including those used to control for confounding | 7-8 |
| | | (b) Describe any methods used to examine subgroups and interactions | NA |
| | | (c) Explain how missing data were addressed | NA |
| | | (d) If applicable, describe analytical methods taking account of sampling strategy | 7-8 |
| | | (e) Describe any sensitivity analyses | NA |
| Results | | | |
| Participants | 13* | (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed | 6 |
| | | (b) Give reasons for non-participation at each stage | NA |
| | | (c) Consider use of a flow diagram | 6 |
| Descriptive data | 14* | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders | 8 |
| | | (b) Indicate number of participants with missing data for each variable of interest | 8 |
| Outcome data | 15* | Report numbers of outcome events or summary measures | 8 |
| Main results | 16 | (a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included | 9-11 |

| | | | |
|--------------------------|----|--|-------|
| | | (b) Report category boundaries when continuous variables were categorized | 9-11 |
| | | (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period | NA |
| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses | 9-11 |
| Discussion | | | |
| Key results | 18 | Summarise key results with reference to study objectives | 12-13 |
| Limitations | 19 | Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias | 14-15 |
| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence | 15 |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results | 15 |
| Other information | | | |
| Funding | 22 | Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based | NA |

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.