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Title: General wellbeing of intensive care nurses: A prototype analysis.

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Keywords: critical care nurse; ICU; prototype analysis; wellbeing.

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General wellbeing of intensive care nurses: A prototype analysis.

ABSTRACT

Aim: To identify intensive care nurses' conceptions of general wellbeing and investigate whether their general wellbeing is prototypically organised.

Background: Prototype analyses of wellbeing have identified central characteristics and prototypicality for New Zealand teachers, lawyers, adolescents, and work wellbeing of nurses. What has not yet been explored is the broad construct of wellbeing in intensive care nurses.

Design: Prototype analysis.

Methods: Three linked studies conceptualise wellbeing in this prototype analysis. In study one nurses reported features of wellbeing. Study two investigated the organisation of these features. Study three sought confirmation of

prototypical organisation.

Results: Sixty-five New Zealand nurses participated. For study one ($n = 23$), the most frequently reported elements of wellbeing included physical health ($n = 26$), work-life balance ($n = 20$), and personal relationships ($n = 18$). For study two ($n = 25$), highest rated elements included mental and emotional health, [general] health, work-life balance, and love. Work-life balance, physical health and personal relationships were in the top five most frequently reported and were rated in the top 12 most central. Overall, ratings of centrality and the number of times reported were positively correlated ($r = .33, p < .005$). For study three ($n = 17$), confirmatory analyses did not reach statistical significance ($p = .15$).

Conclusions: Physical health, work-life balance, and personal relationships are key characteristics of wellbeing for intensive care nurses. Mental, emotional and general health and work-life balance were considered most important for wellbeing.

Relevance to clinical practice:

Physical health, work-life balance, and personal relationships are key characteristics of wellbeing for intensive care nurses. These characteristics of the broad construct of wellbeing are helpful in both defining and identifying conceptual models of wellbeing that may be used to inform the development and measurement of wellbeing programmes.

Keywords: ICU, intensive care nurse, prototype analysis, wellbeing.

INTRODUCTION

The unprecedented demands on the capacity and capability of the global nursing workforce has required strategic objectives including acceleration of nursing education, job creation to offset predicted shortages, and strengthening leadership [1]. Developing an understanding of general wellbeing and its sub-component of work wellbeing are being given increasing attention in health care planning locally [2], nationally [3] and globally [4] to strengthen both existing and future health systems. Given this increased attention, accelerated by the impact of COVID-19, there has been considerable focus on nurses' wellbeing in both research and the media, such as the special issue on 'coronavirus-19 and wellbeing' in the International Journal of Wellbeing [5], the impact of coronavirus-19 on health workers [6], and broader research focusing on illbeing, such as nurse stress, anxiety, distress and fear [7]. A range of recommendations to support nurses' mental health have been developed at individual, peer-to-peer, team and manager levels [8].

The overall construct of nurses' wellbeing transcends contexts; yet the demands of workers' occupational and home environments may offer a distinction to be made in the conceptualisation of work wellbeing and broader general wellbeing. The measurable elements of the Westernised construct of wellbeing are largely consistently represented by leading theorists (e.g., positive relationships [9, 10]) but no single element is thought to either define or operationalise wellbeing as a whole.

BACKGROUND

Wellbeing focuses on constructs such as flourishing, psychological capital, hope, and healthy lifestyle behaviours [for example, see 11, 12], as opposed to illbeing which focuses on stress, depression, anxiety, and ill health [for example, see 13, 14]. Wellbeing is a construct that is increasingly of interest to organisations as they look to increase the positive experiences of employees and, more recently, resilience during times of extraordinary demands due to the consequences of COVID-19 [15]. Different domains of wellbeing have been proposed such as emotional, spiritual, financial, social, cognitive, and physical [16]. Despite advances in the study of wellbeing, the factors contributing to the construct of wellbeing, and the evolving exploration of wellbeing literacy [17], there is yet to be clear agreement on a definition of wellbeing itself. Consequently, the disparate models and frameworks for wellbeing are unsurprising, for example, as the debate about the wellbeing framework which distinguishes between hedonic

wellbeing and eudiamonic wellbeing [18]. How wellbeing is conceptualised may depend on the perspective and context of the person reporting. For example, cultural and national differences and similarities in relation to wellbeing and happiness have become increasingly apparent [19], and context is thought to be important when seeking to conceptualise wellbeing [20].

New Zealand (NZ) occupational groups have been found to identify unique features associated with wellbeing [21]. Work-life balance, satisfaction with education, meaning and purpose, engagement, and autonomy explained variability in job satisfaction for professionals. However, for labourers, these features included work-life balance, absorption, feeling respected, meaning and purpose, and self-esteem. These reported differences between occupational groups, in terms of the features of wellbeing, may extend to a differentiation between the broad construct of general wellbeing and the more specific sub-component of work wellbeing. Understanding how *general* wellbeing and *work* wellbeing are conceptualised in different contexts by occupational groups enables workplaces to focus in on the most salient interventions for the work environment and to provide resources on increasing general wellbeing.

Intensive care nurses are a unique occupational group that are exposed to unique contextual factors that may influence both their work wellbeing and general wellbeing. Work wellbeing is conceptualised as the experience of wellbeing in the workplace, whereas general wellbeing is the overarching wellbeing that transcends specific locations, such as home, leisure, family [20-22]. Intensive care nurses in their daily working lives are exposed to numerous experiences that may affect their moral, ethical, and existential perspectives. It follows that this may affect their sense of wellbeing since moving freely between work and home does not necessarily mean the person is not impacted by their experiences. General illbeing and work illbeing have both received much focus in nursing research, particularly related to depression, stress, and anxiety [23-29], compassion fatigue [30-32], and burnout [33-35]. For example, a recent theoretical review of burnout in nursing highlighted patterns of adverse job characteristics such as high workload, low staffing levels, long shifts and low control [33]. The present study seeks to bring balance to the research by focusing on wellbeing. We have begun this body of work by conceptualising the *work* wellbeing of intensive care nurses which found that both work-life balance and workload were central characteristics [36].

In the current study we aim to identify 1) the characteristics of the broad construct of *general* wellbeing for intensive care nurses, and 2) whether the intensive care nurses' conceptualisation of general wellbeing is

prototypically organised. The nurses' conceptualisation of general wellbeing will then be discussed in relation to existing theoretical conceptions of wellbeing identified in the literature, and previously reported intensive care nurses' conceptions of the more specific sub-component of work wellbeing [36].

DESIGN AND METHODS

Within product development, a prototype is an early sample of a model built to test a concept or process [37]. As a research method, prototype analysis enables subtle elements within a construct to be identified, then prioritised according with perceived importance [38]. Prototypes can be used in researching psychological constructs to develop and test an implicit and loosely conceptualised model, where participants are asked to express their internal conceptualisation. This participant expression is then judged, organised, then tested to investigate whether participants have a "that's it" moment, where there is agreement on the construct and its description, in which case the construct would be considered "prototypically organised". Historically, prototype analysis emerged from the study of concept formation within learning theory, with a base in empiricism [39] and the cognitive sciences, extending back to Plato [40]. Prototype analysis was developed as a method of exploring natural language concepts [38] and has been used to investigate the internal structure of love and commitment [41], gratitude [42], infidelity [43], forgiveness [44], and wellbeing in New Zealand teachers, lawyers [45], and adolescents [46]. Prototype analyses use a series of studies to investigate whether a concept is defined by an 'all-or-none' phenomenon, that is, whether there are 'central' rather than 'critical' features that are prototypical of the concept, which demonstrate that the concept has internal structure [47, 48]. Prototypical organisation of the concept requires individuals to 1) identify and rate centrality of features of the concept, then 2) be influenced by how central the features are to the concept [47].

Procedure

The present study used three linked studies, each with new participants, to determine if the general wellbeing of intensive care nurses is prototypically organised. An overview of the three studies and their associated questions are presented in Table 1.

Insert table 1 here

The first sample of participants developed the set of elements by reporting the features of wellbeing (item generation). The second sample then rated the importance (centrality) of each of these elements to their conception of wellbeing (centrality ratings) and these elements were then split by the researchers into either peripheral and central elements using a median split of the mean centrality ratings. Then finally the third sample rated how close researcher-developed narratives that use either peripheral or central elements were to their conception of wellbeing (prototypicality).

Ethical and research approvals

The study was conducted in accordance with ethical approval of the Auckland University of Technology ethics committee (17/180). Participants who selected the study link in the advertisement were provided an information sheet and consent form detailing the study, the data management plan, de-identification procedure, and their right to withdraw. Agreement to participate was determined by the participant then opting to provide their e-mail address to be sent a link to the study questionnaire.

Participant selection

Purposeful sampling of all New Zealand registered nurses working in New Zealand intensive care units was conducted using professional national bodies, intensive care research nurses, and social media networks based on data from the Nursing Council of New Zealand [49]. Eighty-two intensive care nurses responded indicating interest in participating. Data collection occurred from September to December 2017. To distribute the characteristics of participants between groups we randomly allocated participants to one of the three studies of the prototype analysis. Study one was allocated 30 participants, study two 30 participants, and study three 22 participants.

Data analysis

Data analysis followed the plan described by Jarden et al. [36]. For study one, Fehr's [50] coding procedure was used to extract meaningful individual words and reduce responses with modifiers into a single item. The two researchers [RJ & RM] condensed and categorised items into elements independently, then the researchers compared and contrasted elements. As part of the coding procedure, items determined by the researchers to have potentially different foci were not condensed. A third researcher [MS] reviewed and resolved uncertainty. Final elements were assessed by a nurse and two non-nurses using the "think aloud" cognitive interviewing process [51], where the nurse and lay people spoke aloud their thought processes to the researcher as they worked through the study questions. This enabled the research to determine how these individuals interpreted the questions and to inform refinement of the questions by the research team. For study two, data analysis followed the plan described by Jarden et al. [36]. Descriptive statistics and tests for normality were conducted. A mean centrality rating was calculated for individual elements. An intra-class correlation (ICC) was calculated using a split-half model (two-way mixed, absolute agreement CI 95%) to measure reliability of the means. Cronbach's Alpha was calculated to measure reliability of the rating scale. For study three, normality of all variables was tested using visual inspection of each variable's distribution, QQ plots, and Shapiro-Wilk test of normality. Comparisons between narrative mean ratings were conducted using paired samples *t*-test (for parametric data) and Wilcoxon signed-rank test (for non-parametric data).

RESULTS

Study One: Generation of prototype elements of general wellbeing

Twenty-three of the 30 participants randomised to study one began the study. Partial data were provided by one participant and these data were used in the analysis. Participants ($n = 23$) were mostly married ($n = 12$) NZ European ($n = 15$) women ($n = 20$), and all were between 25 and 57 years of age. A total of 31 elements were identified after items (e.g., 'optimistic', 'look forward to future') were condensed into elements (e.g., optimism). Items such as 'mental health', 'physical health' and 'health' were not condensed to form a broad element 'health', to preserve potential intent of the participant responses. The items, the number of times reported, and the condensed elements are reported in Table 2.

Insert table 2 here

Those elements of 'wellbeing' most frequently reported by participants were: physical health ($n = 26$; where n is the number of participants contributing items to the element 'physical health'), work life balance ($n = 20$), personal relationships ($n = 18$), accomplishment ($n = 14$), mental health ($n = 8$), health ($n = 8$), happiness ($n = 8$), emotional health ($n = 8$), peaceful ($n = 8$), resilience ($n = 7$), and job satisfaction ($n = 7$). The frequency of each item reported varied from 1 to 11 and no single item was reported by all participants. The most frequently reported items were 'work life balance' followed by 'physical health'. Least frequently reported items included 'love' and 'hope'. This variation suggests there was no one item New Zealand intensive care nurses associated with their general wellbeing. There were, however, groups of items that characterised participant responses such as items that were of positive affect, for example, 'fun', 'happiness', and 'hope'. Positively phrased negative items were also evident, such as 'not exhausted'. The prototype of wellbeing also included behaviours and cognitive activities such as 'giving love', 'contributing to society', and 'look forward to the future'.

Study Two: Determination of the centrality rating of wellbeing elements identified by participants in study one

Participants ($n = 25$) were primarily married ($n = 16$) NZ European ($n = 17$) females ($n = 21$), and all were between 25 and 60 years of age, consistent with study one participant demographics. Partial demographic data was provided by two of the 25 participants and their responses were used in the analysis. The highest rated elements included mental health ($M = 8.88$, $SD = 1.24$; where M is the mean and SD is the standard deviation) and emotional health ($M = 8.80$, $SD = 1.12$), general health ($M = 8.68$, $SD = 1.41$), work-life balance ($M = 8.68$, $SD = 1.86$), and love ($M = 8.48$, $SD = 1.36$). All mean centrality ratings are presented in Supplementary Material (S1). Descriptive statistics and tests for normality are presented in Supplementary Material (S2). The intra-class correlation (ICC) using a split-half model (two-way mixed, absolute agreement CI 95%) analysed the 25 participant responses with the 31 elements (ICC = .862, $p < .000$), suggesting good inter-rater reliability. Cronbach's Alpha was calculated ($\alpha = .89$), suggesting good reliability of the rating scale.

Mean centrality ratings of study two were compared with the frequency reported by participants from study one. Descriptive statistics and tests for normality are presented in Supplementary Material (S3). Some frequently

reported elements (F) from study one were also rated more central to wellbeing in study two. When study one and study two data were compared, work-life balance ($F = 20$; $M = 8.68$, $SD = 1.86$), physical health ($F = 26$; $M = 8.44$, $SD = 1.33$) and personal relationships ($F = 18$; $M = 8.40$, $SD = .91$) were in the top five most frequently reported elements by the intensive care nurses, and were rated in the top 12 most central to their wellbeing. Some elements reported by very few participants were rated highly in terms of centrality. For example, love ($F = 1$; $M = 8.48$, $SD = 1.36$) and enjoyment ($F = 1$; $M = 8.44$, $SD = 1.50$). Overall, ratings of centrality (from study two) and the number of times reported by participants (from study one) were positively correlated ($r = .33$, $p < .005$). This was a low positive correlation, suggesting those elements more frequently reported as important to participants' wellbeing in study one were more likely to be rated more central to participants' wellbeing in study two. Correlation of centrality rating (0 = not at all central / important, 10 = extremely central / important) and number of times reported is illustrated in Figure 1.

Please insert figure 1 here

The intensive care nurses rated general 'health', 'personal relationships', and 'work-life balance' more prototypical of wellbeing than 'spirituality', 'contribute to society' and 'stress-free'. The nurses' differences between the number of times an element was reported in study one and the centrality ratings in study two may reflect measurement of different parts of the construct's internal structure, as commonly found in previous prototype analyses [45]. The reliability between the ratings, suggests prototypical organisation of the term wellbeing. The ratings of the importance of these elements to the nurses' conceptions of wellbeing are illustrated in Figure 2.

Please insert figure 2 here

Study Three: Confirmation of the prototypical organisation of the term wellbeing

Twenty of the 22 participants randomised to study three commenced the study. Of these 20 participants, three did not respond to the rating questions. The final sample size available for analysis was 17. Participants ($n = 17$) were primarily married ($n = 12$) NZ European ($n = 13$) females ($n = 16$), and all were between 25 and 63 years of age,

consistent with study one and two participant demographics. The median split of the means to generate peripheral and central elements is presented in Table 3.

Insert table 3 here

For the narratives, data were normally distributed enabling parametric statistical analysis. The mean score for the central narrative was 8.82 ($SD = .95$) and peripheral narrative 8.41 ($SD = 1.54$), $t(16) = 1.51$. The mean difference in scores for the central and peripheral narratives was .41 with a 95% confidence interval ranging from -.17 to .99 and this difference was not statistically significant ($p = .15$).

Nine of the 17 nurses rated no difference between the central and peripheral narratives. This may occur in a prototype analysis study where the central and peripheral narratives are very similar in their closeness to their conceptions of wellbeing and participants do not differentiate between. Cohort effects in conceptualisations of wellbeing were not examined for possible demographic differences in responses (e.g., age, ethnicity, gender, nursing experience) due to the small sample size. Since there was no significant difference between the means for wellbeing, this study cannot confirm that wellbeing was prototypically arranged for this sample of intensive care nurses.

DISCUSSION

This research sought to conceptualise the construct of general wellbeing in a sample of New Zealand intensive care nurses. The findings are now explored in terms of theoretical conceptions of wellbeing and are then compared and contrasted with previously reported intensive care nurse conceptions of work wellbeing [36]. Studies one and two demonstrated that the intensive care nurses' conceptions of general wellbeing are structured prototypically, that is, the term 'wellbeing' was not defined by specific elements that met an 'all-or-none' criteria. However, it was not possible to confirm this in study three, possibly due to the small sample size. This was the first study to investigate the prototype of the general wellbeing in ICU nurses, and yielded some similarities with, and important differences from, other groups of workers studied using this method. For teachers and lawyers, physical health, work-life balance, and feeling valued were central characteristics [45]. Similarly, in the current study for nurses', health and work-life balance were central characteristics. This was in contrast to adolescents, for whom enjoyment/having fun, feeling safe, and being kind/helpful were central characteristics [46]. This suggests conceptualisations of wellbeing

show developmentally appropriate progressions. Intensive care nurses' conceptualisations of wellbeing differed from existing theoretical perspectives and models of wellbeing [9, 10, 52, 53] as no one model sufficiently explained these intensive care nurses' conceptions of general wellbeing. For example, self-acceptance is reported by Ryff as a core dimension of wellbeing [9], yet self-acceptance was not reported to be central by these nurses. Conversely, the nurses identified physical health as central, yet physical health is not evident in the model of Seligman [10] nor Huppert and So [54]. The intensive care nurses' conceptions of general wellbeing were, however, aligned with those identified by Hone et al. [45] and the domains of the New Economics Foundation's evidence-based actions to enhance personal wellbeing 'Five Ways to Wellbeing' [55]. For example, all five domains were evident in these nurses' conceptions of wellbeing: Connect ("personal relationships" and "professional relationships"), Be active ("exercise", "fitness" and "physical health"), Take notice ("mindful" and "centred"), Keep learning ("professional development"), and Give ("contribute to society"). The 'Five Ways to Wellbeing' has increasingly been adopted globally for individuals, families, communities and organisations [56, 57]. As such, it is possible the 'Five Ways to Wellbeing' may be an effective model for intensive care nurses, testing this model poses a potential future research opportunity.

The characteristics of intensive care nurse general wellbeing had some similarities with, but also differences to, intensive care nurses' conceptions of work wellbeing [36]. What was similar for both wellbeing and work wellbeing was that the term 'relationships' was strongly evident in a variety of elements, for example, professional and personal relationships. Also, the term 'health' was evident in a range of elements and was reported generally as 'health', and more specifically as 'emotional health', 'mental health', and 'physical health'. Determining the relationship between wellbeing and physical health is still evolving [58-61]. For example, two studies suggest an association between physical health and psychological health. Firstly, in a systematic review of literature that included 14,000 individuals with cardiovascular disease, DuBois et al. [62] found in over 60% of studies that positive psychological constructs (such as optimism) were significantly associated with positive health outcomes (such as reduced hospital readmissions). Secondly, Gana et al. [63] measured the relationship between functional physical health (hearing, vision, medications prescribed, and dyspnoea) and positive affect at six time intervals over a period of 13 years in 3,755 older adults (aged 62-102 years). They found that good functional health at baseline significantly predicted subsequent positive affect, however positive affect at baseline did not predict subsequent good health.

Satisfaction with aspects of work were also identified as a characteristic of the broader construct of

wellbeing, specifically stated as “job satisfaction”, then more broadly such as feeling positive about work, and experiencing a bully-free workplace. Job satisfaction has an important role in both wellbeing and work wellbeing, for example, Galletta et al. [64] investigated 222 Italian intensive care nurses’ team commitment. The nursing work characteristics and team commitment relationship was mediated by both perceived supervisor support and job satisfaction, which in turn strengthen individual-organisation relationships and wellbeing.

In contrast to work wellbeing, for general wellbeing the nurses identified several new characteristics, such as contributing to society, experiencing a happy and stable family life, and having pets. In the context of the broader literature, contributing to society can have a direct positive effect on wellbeing, primarily due to the pro-social and meaning-making benefits [65, 66]. Family connections may also contribute to a sense of meaning and purpose in individuals. For these family connections, the most important predictor of wellbeing is reported to be the quality of the intergenerational relationship [67]. Similarly, pets can also promote wellbeing for those people who perceive pets to have socially supportive attributes, thus enhancing their sense of social connection and social support [68].

The present study is part of a broader body of work on ICU nurse wellbeing which seeks to understand and conceptualise both work and general wellbeing in this group. The present findings, when compared with our previous work[36], suggest the construct of intensive care nurse ‘wellbeing’ has its own unique characteristics that differ prototypically from these nurses’ conceptions of ‘work wellbeing’, and these are illustrated in the Venn diagram below (see figure 3). This is a new finding and contributes to understanding and support of wellbeing in ICU nurses, which is particularly salient both now and, in the future, as we emerge from the COVID-19 pandemic.

Please insert figure 3 here

This diagram, illustrating the potential relationship between the intensive care nurses’ general wellbeing and work wellbeing, reinforces the importance of considering and addressing context in wellbeing research [20]. Research investigating healthcare workers, the impacts of COVID-19, and potential interventions is beginning to spotlight wellbeing, reflected in the commentary by Wharton et al. [69], and the work of Donnelly et al. [70] and Barthélemy et al. [71]. However, there remains a strong focus on illbeing, such as burnout [72] and stress, anxiety and depression [73]. Continuing to bring about balance to this research in terms of the mental health continuum remains an opportunity to understand and support the resilience of nurses during these extraordinary times and into the

future. The characteristics of intensive care nurse wellbeing identified in this study now inform strengthening a definition and conceptual model for these nurses' general wellbeing. This model can be tested and compared to broader models for general wellbeing and nurses' work wellbeing, informing both future wellbeing assessments and wellbeing programs that may enhance both nurses' work and broader wellbeing.

LIMITATIONS

Prototype analysis is a method that, until recently, has primarily been used to study large student cohorts. As such, a guide for sample size in prototype analysis has not yet been established. To determine sample sizes for each of the three-linked studies, previous prototype analysis authors were contacted [43, 45] and prior prototype analyses were explored [41-45]. Sampling in previous studies, where reported, was based primarily based on ensuring adequate item and element generation. However, most of these studies were of large student cohorts [41-43]. What this prototype analysis has demonstrated is that for smaller cohorts, study three needs an adequately powered sample size; therefore, we recommend future researchers allow for this. As recommended by Jarden et al. [36], more overtly highlighting key differences between narratives and using narrative rankings rather than ratings may facilitate participant differentiation between the two. The external validity of the study is limited by the mostly female, Caucasian ICU nurses which may have gender, cultural and country differences in relation to wellbeing. For example, the role of spirituality in wellbeing in some cultures is more salient than found in this study [52, 74, 75]. However, New Zealand ICU nurses often have international nursing experience which may shape their perceptions [76]. The prototype analysis method may lose some of the nuances that could be detected with other methodologies. Future research may expand on the present research potentially with a grounded theory approach. Since the collection of data, the COVID-19 pandemic has been a significant event in ICU nursing. It is possible that this may affect how ICU nurses in the countries significantly affected by COVID-19 conceptualise wellbeing; therefore, exploring this is an opportunity for future research.

IMPLICATIONS AND RECOMMENDATIONS FOR PRACTICE AND FURTHER RESEARCH

In addition to the suggestions for future research provided in the limitations section, we recommend engaging nurses locally by asking what they feel is important for their general wellbeing. Next, these nurses' conceptions should be compared with those found in this prototype analysis to explore similarities and differences. Based on this

exploration, future models of general wellbeing can be developed, adopted, and tested locally by healthcare organisations, ICUs, and nurses. Furthermore, the conceptions of ICU nurses in this prototype analysis have highlighted key focal points for practice areas to consider in terms of local interventions and initiatives to target general wellbeing.

CONCLUSIONS

This study conceptualised the broad construct of wellbeing for a sample of intensive care nurses working in ICUs throughout New Zealand. Intensive care nurse wellbeing is an under-researched area with the majority of the work undertaken focusing on illbeing. Future research investigating interventions and measures targeting the identified key characteristics of wellbeing, such as general health, work-life balance, and personal relationships, is recommended for this group of intensive care nurses. These characteristics also now inform the identification of both a definition and conceptual model for these nurses' wellbeing, as a first step in the development and measurement of wellbeing programs.

WHAT IS KNOWN ABOUT THE SUBJECT

- Strengthening the empirical base for wellbeing in unique populations is important for health care planning at a local, national and global level.
- Wellbeing is considered a construct with measurable elements; yet, there is no clear agreement on a definition of wellbeing.
- Cultural and national differences and similarities in relation to wellbeing and happiness are evident.
- The prototype analysis is a method of exploring natural language concepts

WHAT THIS PAPER CONTRIBUTES

- A prototype analysis was used to investigate the broad construct of wellbeing in intensive care nurses
- No one specific feature of wellbeing was identified by every intensive care nurse yet there were groups of features that characterized intensive care nurses' conceptions of wellbeing.
- Physical health, work-life balance, and personal relationships are key characteristics of wellbeing for intensive care nurses.
- These characteristics of the broad construct of wellbeing are helpful in both defining and identifying

conceptual models of wellbeing that may be used to inform the development and measurement of wellbeing programs.

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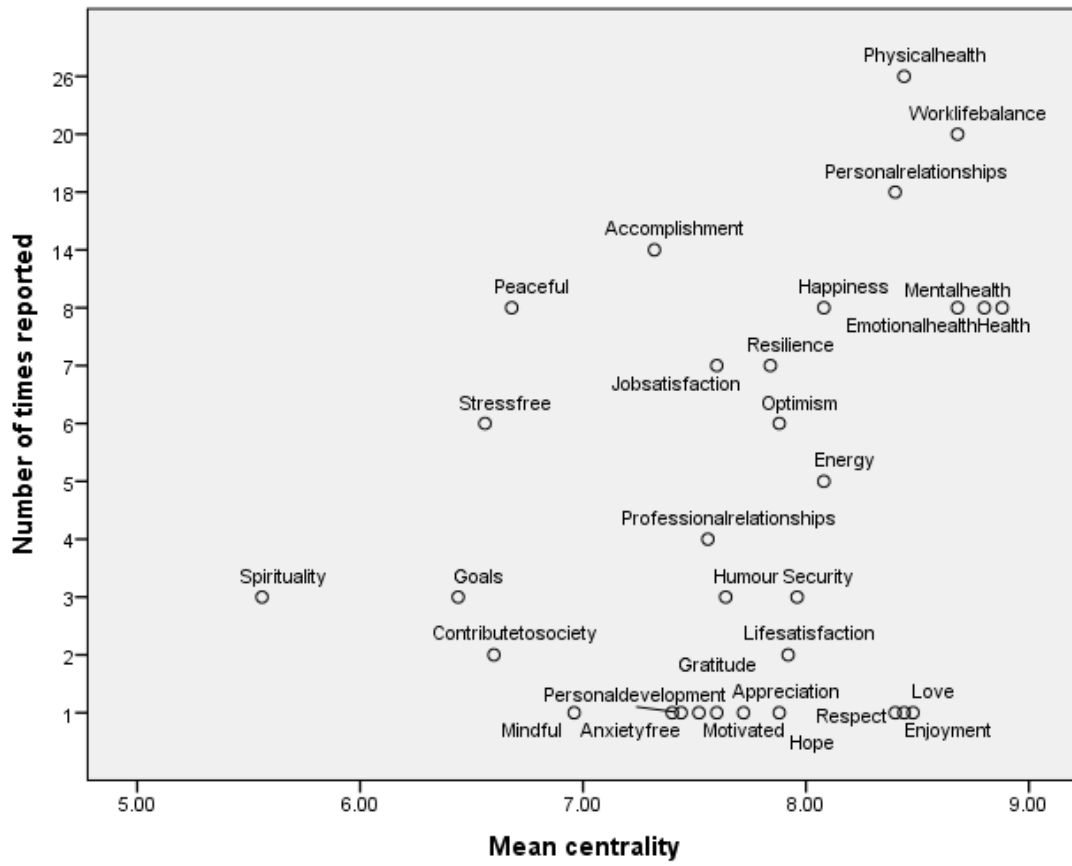


Figure 1. Correlation of centrality rating (study two) and number of times reported (study one) for well-being.

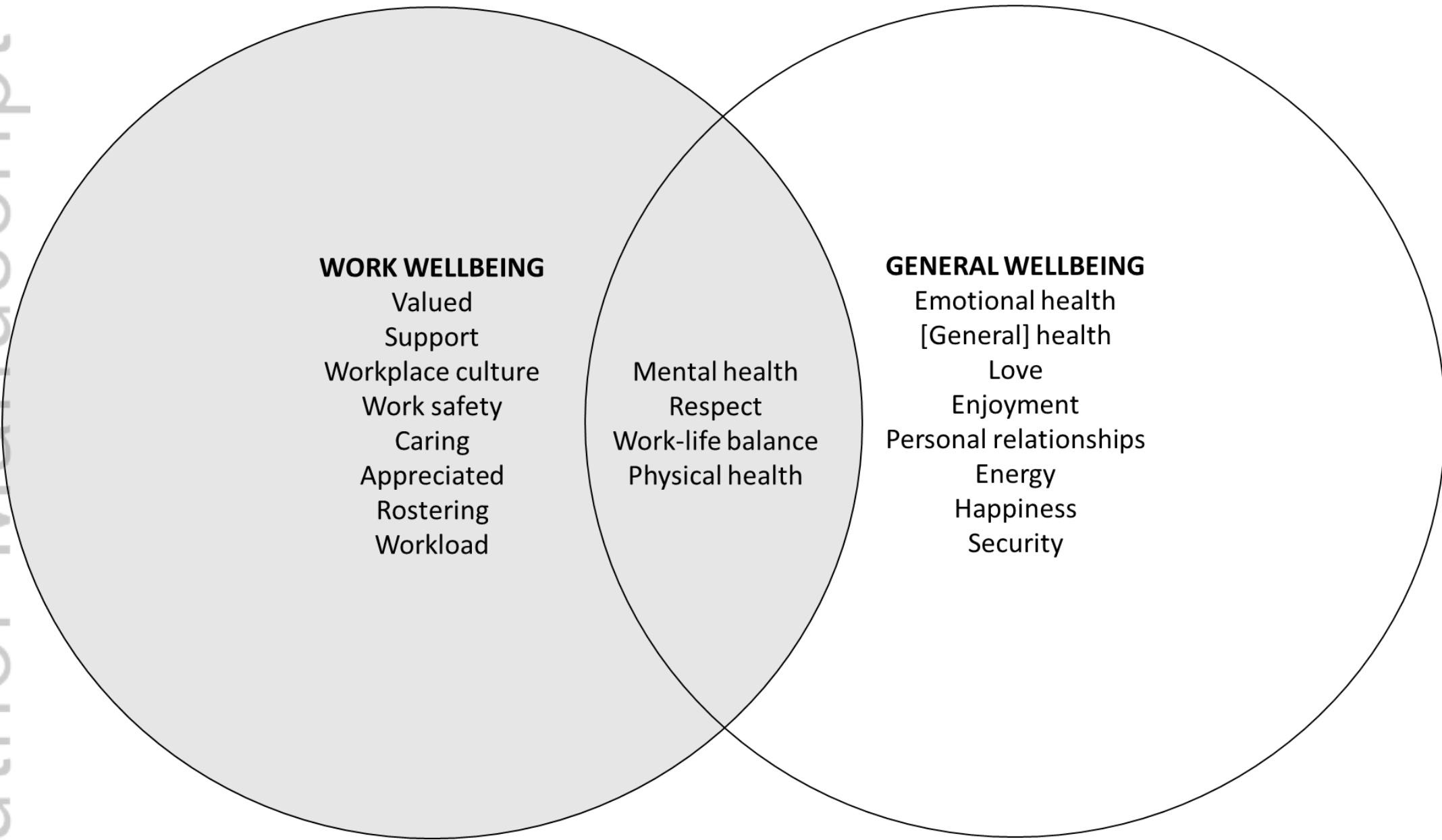


Figure 3. Venn diagram illustrating the possible relationship between intensive care nurse conceptions of wellbeing and work wellbeing

Note: The wellbeing elements in this figure are the 12 most centrally rated elements from this current prototype analysis of general wellbeing. The work wellbeing elements are drawn from those reported by Jarden et al. [36]. Job satisfaction was also reported as an element of wellbeing but was not in the 12 most centrally rated.

Table 1.**Overview of the three linked study's aims and questions.**

	Study one (N = 30)	Study two (N = 30)	Study three (N = 22)
Aims	Generate 'items' representative of the construct of wellbeing, by asking participants for the features of their wellbeing. The features (items) are then coded into elements (grouped common features).	Measure whether participants associate (identify and reliably rate) some elements closer to the concept than others to determine whether there is an internal structure to the concept (prototypical organisation).	Confirm the prototypical organisation of the term wellbeing through investigating whether a new sample of participants rated a 'central' narrative higher than a 'peripheral' narrative of wellbeing.
Questions	<i>"This is a study of what people think of when they consider the word 'wellbeing'. There are no right or wrong answers. Please feel free to think specifically and broadly about the word</i>	<i>"In a previous study we asked people to list what they thought of as the key characteristics of wellbeing. The most frequent responses are listed below in random order. Please read</i>	Participants were asked to review two hypothetical narratives and rate how close each narrative was to their concept of work wellbeing using a 0-10 (eleven-point) rating scale with two end anchors: 'not at all close' and 'extremely close'. The narratives are presented below: 1) <u>Female Narrative One 'Central' Wellbeing: Sarah's</u>

“wellbeing”. Imagine that you are explaining this term to someone who has no experience of ‘wellbeing’ and answer the following question: What, in your opinion, are the key characteristics of ‘wellbeing’? Please take about five minutes to list as many characteristics as you can in the box below.”

through the entire list and then rate how central (or important) you think each of the characteristics is to the concept of wellbeing, selecting a number between 0 and 10 (where 0 = not at all central / important and 10 = extremely central / important). We would like you to think not only about your own experiences with wellbeing but the concept of wellbeing in general - what you think are its defining characteristics. Don’t worry about why you think something is or isn’t central.”

healthy; physically, emotionally and mentally. She has a sense of enjoyment, energy, and balance between her work and home life. Her personal relationships support her feelings of being loved and respected.

2) Male Narrative One ‘Central’ Wellbeing: Sam’s healthy; physically, emotionally and mentally. He has a sense of enjoyment, energy, and balance between his work and home life. His personal relationships support his feelings of being loved and respected.

3) Female Narrative Two ‘Peripheral’ Wellbeing: Susan feels mindful, peaceful, and spiritual. She is motivated and has a sense of accomplishment. She has goals and opportunities for personal development. She contributes to society and feels stress-free and anxiety-free.

-
- 4) Male Narrative Two 'Peripheral' Wellbeing: Simon
feels mindful, peaceful, and spiritual. He is motivated and has a sense of accomplishment. He has goals and opportunities for personal development. He contributes to society and feels stress-free and anxiety-free.
-

Table 2.

Study one participant-reported 'features' (items) of general wellbeing and the researcher-determined 'elements' these 'features' were allocated to.

Participant-reported features/items of general wellbeing (frequency of times reported)	Researcher-determined 'elements'
Content (8)	Accomplishment
Fulfilment (1)	Accomplishment
Pleased (1)	Accomplishment
Proud of achievements (1)	Accomplishment
Self-empowered (1)	Accomplishment
Sense of accomplishment (1)	Accomplishment
Wholeness (1)	Accomplishment
Not anxious (1)	Anxiety-free
Appreciated (1)	Appreciation
Contributing to society (1)	Contribute to society
Feeling useful to society (1)	Contribute to society
Control emotion (1)	Emotional health
Emotionally well (5)	Emotional health
Positive feelings about oneself (1)	Emotional health
Self-soothe (1)	Emotional health
Energy (4)	Energy
Not exhausted (1)	Energy
Fun (1)	Enjoyment
Goals (3)	Goals
Giving love respect acknowledgement (1)	Gratitude
Happiness (8)	Happiness
Health (5)	Health
Healthy lifestyle (1)	Health
Manage health (2)	Health
Hope (1)	Hope
Finding humour (3)	Humour
Appropriate training (1)	Job satisfaction
Bully free workplace (1)	Job satisfaction
Feel positive about work (1)	Job satisfaction
Job satisfaction (3)	Job satisfaction
Management support (1)	Job satisfaction
Satisfied (2)	Life satisfaction
Love (1)	Love
Mentally well (8)	Mental health
Mindful (1)	Mindful

Motivation (1)	Motivated
Look forward to future (2)	Optimism
Optimism (1)	Optimism
Optimistic (1)	Optimism
Positive future outlook (1)	Optimism
Positivity (1)	Optimism
At peace with self (1)	Peaceful
Calm (2)	Peaceful
Centred (1)	Peaceful
Peace (2)	Peaceful
Relaxed (2)	Peaceful
Personal development (1)	Personal development
Happy stable family life (1)	Personal relationships
Pets (1)	Personal relationships
Positive connections with others outside of work (3)	Personal relationships
Relationships outside of work (4)	Personal relationships
Sharing life with loved & enjoyed (2)	Personal relationships
Social (1)	Personal relationships
Social connections outside of work (3)	Personal relationships
Social support from friends family (2)	Personal relationships
Support (1)	Personal relationships
Controlled alcohol intake (1)	Physical health
Exercise (4)	Physical health
Fitness (1)	Physical health
Nutrition (1)	Physical health
Physical activity (2)	Physical health
Physical health (10)	Physical health
Physically well (1)	Physical health
Sleeping well (6)	Physical health
Positive connections with colleagues (3)	Professional relationships
Relationships professional at work (1)	Professional relationships
Coping (1)	Resilience
Life manageable (1)	Resilience
Manage disappointment (1)	Resilience
Manage grief (1)	Resilience
Resilience (3)	Resilience
Respected (1)	Respect
Having a home (1)	Security
Income security (2)	Security
Spiritually well (3)	Spirituality
Ability to disconnect from stressful situations (1)	Stress-free

Managing stress (2)	Stress-free
Not stressed (3)	Stress-free
Activities outside work (3)	Work life balance
Balanced (2)	Work life balance
Not overwhelmed by work (1)	Work life balance
Separate home family work (1)	Work life balance
Sufficient leave entitlements (1)	Work life balance
Wellbeing influenced by personal and work life (1)	Work life balance
Work life balance (11)	Work life balance
Wellbeing is umbrella term (1)	Not coded

Table 3.

Median split of the means from study two centrality ratings.

Central elements	Mean	Peripheral elements	Mean
Mental health	8.88	Resilience	7.84
Emotional health	8.8	Appreciation	7.72
Health	8.68	Humour	7.64
Work-life balance	8.68	Gratitude	7.6
Love	8.48	Job satisfaction	7.6
Enjoyment	8.44	Professional relationships	7.56
Physical health	8.44	Motivated	7.52
Personal relationships	8.4	Personal development	7.44
Respect	8.4	Anxiety-free	7.4
Energy	8.08	Accomplishment	7.32
Happiness	8.08	Mindful	6.96
Security	7.96	Peaceful	6.68
Life satisfaction	7.92	Contribute to society	6.6
Hope	7.88	Stress-free	6.56
Optimism	7.88	Goals	6.44
		Spirituality	5.56