MR BENJAMIN MACKIE (Orcid ID : 0000-0002-7662-3357)

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Title

Psychometric testing of the revised "Families' Importance in Nursing Care – Nurses' Attitudes Instrument"

Author(s): Benjamin R MACKIE*, Prof Andrea MARSHALL, Prof Marion MITCHELL, Dr. Michael J IRELAND.

Affiliation(s):

Benjamin R MACKIE RN BN (Dist), PhD Candidate; Toowoomba Hospital, Menzies Health Institute Queensland, School of Nursing and Midwifery, University of the Sunshine Coast and Griffith University, Australia.

* Corresponding author at: University of the Sunshine Coast, 90, Sippy Downs Drive, Sippy Downs, QLD 4556, Australia

E-mail address: Benjamin.mackie2@griffithuni.edu.au; Twitter: @BenjaminMackie

Andrea MARSHALL PhD RN; Professor of Acute and Complex Care Nursing, NHMRC Centre of Research Excellence in Nursing, Menzies Health Institute Queensland and Gold Coast Hospital and Health Service, Southport, Queensland, Australia

Marion MITCHELL PhD RN; Professor; School of Nursing and Midwifery and NHMRC Centre of Research Excellence in Nursing, Menzies Health Institute Queensland, Griffith University and Intensive Care Unit, Princess Alexandra Hospital, Brisbane, Australia

Michael J IRELAND PhD, School of Psychology, Faculty of Health, Engineering and Sciences and Innovative Mental Health Solutions (IMHS) Program, Institute for Resilient Regions, University of Southern Queensland, Australia

Conflict of interest

No conflict of interest has been declared by the author(s).

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Abstract

Background: The validity of instruments is crucial in ensuring that data collected are sound and that these data represents what the instrument claims to measure. When an instrument is revised or used in a different population it is useful to re-examine its construct validity. Aim: To test the psychometrics properties of an instrument - the revised Families' Importance In Nursing Care - Nurses' Attitudes, designed to measure nurse' attitudes towards involving family in nursing care in an adult acute care setting.

Design and methodology: A cross-sectional survey design was used in April - May 2016 with a sample of Enrolled and Registered Nurses (N = 212) to test the factor structure of the revised Families' Importance In Nursing- Nurses' Attitudes instrument. The instrument had 26 items with a five-point Likert response scale. Principle components analysis and exploratory factor analysis were performed with oblique rotations to assess the internal structure of the instrument.

Setting: A regional referral hospital in Queensland, Australia.

Results: Using Principal Components Analysis and Principal Axis Factoring we obtained the same factor structure to that originally identified for the instrument. Our results suggested the removal of six items to refine the instrument and achieve simple structure.
Conclusion: The removal of several items, relabeling of factors and residual cross-loading issues suggests that further revisions to the instrument are needed.

Keywords: acute care, attitudes, family care, construct validity, factor analysis, family, nursing, psychometric testing and survey.

Summary Statement

Why is this research or review needed?

- Family involvement in patient care may improve quality and the attitudes nurses hold may either help or hinder family involvement.
- The revised Families' Importance in Nursing Care – Nurses' Attitudes instrument is most widely used in Europe to measure nurses' attitudes about the importance of involving families in nursing care.
- A key validity issue in new and revised scales is the replication of the hypothesized factor structure using a new sample.

What are the key findings?

- Factor analysis of the revised Families' Importance in Nursing Care – Nurses' Attitudes instrument suggests item refinement is still needed.
- Our data resulted in the removal of six items to achieve a four-factor structure represented by 20 items.
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How should these findings be used to influence policy/practice/research/education?

- This paper shows the importance of a systematic and evidence-based approach to determining the construct validity of new and refined scales.
- Following further evaluation this instrument may prove suitable to measure specific interventions that are targeted at changing nurses' attitudes to promote family centred practices in hospitals.

INTRODUCTION

Family involvement in patient care is clinically important as it improves the quality of healthcare (Berger et al. 2014; Calvert et al. 2015). During hospitalization, patients and their families are frequently confronted with complex health situations that can result in feelings of uncertainty and helplessness (Lolaty et al. 2014). Internationally, a growing body of evidence highlights the benefits of involving families in healthcare services, both for patients and

family members (Meterko et al. 2010; Mitchell et al. 2012; Rukstele & Gagnon, 2013); however, the implementation of practices which promote and support family participation in patient care has been slow (Berger et al. 2014). Nurses are uniquely positioned to promote family involvement in patient care, however, the attitudes and beliefs they hold may help or hinder this practice (Mackie et al. 2017). Given the importance of this issue, the attitudes nurse's hold towards family involvement in nursing care has been examined in several European studies using the "Families' Importance in Nursing Care – Nurses' Attitudes" (FINC – NA) instrument (Benzein et al. 2008; Blondal et al. 2014; Rahmqvist Linnarsson et al. 2015). While self-report instruments, such as the FINC – NA are useful for observing phenomenon like beliefs, attitudes and perceptions of nurses towards family collaborating and partnering in patient care (Boynton et al. 2004), it is imperative that the instruments used are robust, have demonstrated reliability and validity that is able to be replicated and confirmed in independent samples.

BACKGROUND

In healthcare research, psychometric instruments provide a direct and pragmatic method of measuring variables on a wide range of topics (Waltz et al. 2010). There exists a variety of psychometric instruments that have been used that add to our understanding of nurses' attitudes towards involving family in care but the majority are context specific, such as in the area of pediatric nursing (Shields & Tanner, 2004), emergency care (Hallgrimsdottir, 2000) and intensive care (Leske, 1991). In 2008, Benzein et al. (2008) developed an instrument to measure nurses' attitudes about the importance of families being included in the nursing care of acutely ill hospitalized adult patients. This English language instrument was called the "Families' Importance in Nursing Care – Nurses' Attitudes" (FINC – NA) (Benzein et al. 2008). In the FINC-NA, 'Family members' and 'families' were described as a self-defined group of individuals considered significant for the patient, regardless of blood ties or law (Benzein et al. 2008). The FINC-NA was developed inductively from 23 research articles that measured nurses' attitudes towards their perception of families' importance in nursing care. The initial pool of 117 items was subjected to a critical appraisal process and reduced to 82 items. The content validity of the 82 items was assessed through several expert reviews that resulted in a further reduction of items to a final 59-item tool. A principal component analysis

on the 59 item FINC-NA further reduced the items by 33 because 26 of the items demonstrated weak factor loadings (< 0.3). Analysis of the remaining 26-items suggested a four factor structure, explaining 44.9% of the total variance (Benzein et al. 2008). Items loading in the first factor were labelled 'families as a resource in nursing care' (Fam-RNC), second factor items were labelled 'family as a conversational partner' (Fam-CP), third factor items were negatively worded statements about the family and were labelled 'family as a burden' (Fam-B) and the fourth factor items were labelled 'family as its own resource' (Fam – OR).

This 26-item instrument (FINC-NA) was subsequently language-validated in Iceland and Spain (Pascual et al. 2014; Skuladottir et al. 2010). In 2011, a revised FINC-NA was developed that retained all 26 items but aimed to increase the potential variability that could be recorded by expanding the response scale to a 5-point Likert scale rather than the earlier 4-point scale (Saveman et al. 2011). The new response format ranged from 1 = totally disagree to 5 = totally agree (Figure 1). Following this revision, Saveman et al. (2011) used principal component analysis with orthogonal rotation to test whether the revised FINC-NA possessed the same factor structure reported by Benzein et al. (2008). Using a new sample of Swedish nurses (n = 246), Saveman et al. (2011) were able to replicate the same four factors, suggesting that the dimensionality of the FINC-NA was unaffected by the expanded Likert scale response option (Saveman et al. 2011). The item-total correlations for the subscale of the revised FINC-NA were .869 (Fam-RNC), .833 (Fam-CP), .728 (Fam-B) and .786 (Fam-OR) indicating strong correlations. Cronbach's alpha coefficient was high at .92 for the revised FINC-NA total score (Saveman et al. 2011).

The use of factor analysis is an integral part of examining the structure and estimating the construct validity of instruments and is particularly important when existing instruments are modified, or when an instrument is used in a different population (Hinkin, 1998, Schonrock-Adema et al. 2009). Few studies outside of Europe have reported using the FINC-NA and the revised FINC-NA (Saveman et al. 2011) has not been validated in other populations outside of Sweden. Initially, Benzein et al. (2008) used a scree-plot to determine the number of factors to be extracted from the FINC-NA. However, relying on a single criterion to determine the number of factors not a recommended (Costello & Osbourne, 2005) especially given the subjective nature of scree test interpretation (Tabachnick & Fidell, 2007; Williams et al. 2010). The implications are that Benzein et al. (2008) may have extracted too many or too few factors in their analysis. Exploratory factor analysis (EFA) is an appropriate analytic strategy in cases where the investigator has no expectations regarding the number or nature of the factors in an instrument (Williams et al. 2010). However, this was not the case in the EFA conducted by Saveman et al. (2011) since they constrained the factor solution to yield four factors. By using EFA but forcing the solution to produce a set number of factors, the validity of the solutions generated are called into question, since this technique is not appropriate for either exploring or testing the factor structure of the instrument. Further, evidence suggests that different rotation methods can have substantial influence on the solutions generated (Schmidt & Sass, 2011). Saveman's et al. (2011) choice to use an orthogonal rotation during EFA on the revised FINC-NA assumes the factors will be

uncorrelated (DeCoster, 1998). However, there is theoretical evidence to expect that these factors will share variance (Costello & Osborne, 2005; Saveman et al. 2011). Consequently, the methods used by Saveman et al. (2011) had a potential material, adverse effect on the solutions generated and deviates from recommended best practices (Gaskin & Happell, 2014). Thus, the construct validity of the revised FINC-NA has not yet been established.

In light of these issues, we examined the construct validity of the revised FINC-NA instrument (Saveman et al. 2011) using evidence based EFA procedures. This was deemed additionally relevant to informing its suitability for future research and possible application in the Australian adult acute care setting.

AIM

The aim of this study was to examine the construct validity of an instrument – the 26-item revised FINC-NA, designed to measure nurse' attitudes towards involving family in nursing care in an adult acute care setting.

METHODS

Study design and sample

A cross-sectional survey design was used with a non-probability sample of registered nurses (RN) and enrolled nurses (EN) who, in their day-to-day work, provided care to hospitalized acutely unwell adults. A RN has an increased scope of practice compared to an EN, however, they work collaboratively to assess and meet patient needs. To ensure an adequate sample size for EFA we recruited to a ratio of respondents to variables at least five observations per variable (Comrey & Lee, 1992), the survey was distributed to 476 nurses on 10 adult acute care wards Anticipating a minimum 30% response rate (Boynton, 2004), this sample size would result in approximately 130 surveys to be used in the factor analysis.

Setting

The study setting was a regional referral hospital in Queensland, Australia. This hospital has 324 beds, provides acute inpatient care including medical, surgical, obstetrics and coronary care services and is staffed by 870 full-time equivalent nurses. The hospital provides families with information on local accommodation, counselling and financial support.

Instrument

The 26-item FINC-NA was used to collect data (Figure 1). As stated previously, the instrument is a self-reporting survey with a five-point Likert response scale with possible scores ranging from 26-130. The higher the total instrument score, the more positive the nurse's attitude towards families in nursing care. Prior to completing the 26-item FINC-NA, nurses were instructed to provide demographic information such as gender, professional role,

ward area of practice (e.g., medical or surgical), professional membership and level of education. Additionally, nurses were asked to indicate if they had previous personal experience with a seriously ill family member and if there were hospital documents which helped them to support family members. Written permission was gained from the authors to use the instrument.

Data Collection

From April to May 2016, nurses were invited to complete the instrument following distribution of a two-page information sheet outlining the purpose of the study, ensuring them of anonymity and informing them of their right to decline the invitation prejudice. Return of a completed instrument implied informed consent. Completed instruments were returned to a central location at each participating ward either to a return box or in a sealed envelope.

Ethical considerations

Ethics approval to conduct this study was granted from both the hospital and health service district: HREC/16/QTDD/1 and university Human Research Ethics Committee: Ref No: 2016/144.

Data Analysis

Principal Components Analysis (PCA) and EFA was conducted to explore the internal structure of the 26-item FINC-NA. The data were analyzed using SPSS for Windows version 22.0 (SPSS Inc., Chicago, IL, USA). Data were cleaned following repeated cycles of screening, diagnosing and editing of suspected data abnormalities (Van den Broeck et al. 2005). Demographic data were summarized using descriptive analyses, including means, standard deviations and frequency distributions. Scores for the 'Fam-B' items were reverse coded before analyzing (Skuladottir et al. 2010). A five-step EFA protocol was followed (Williams et al. 2010) (Figure 2). The guideline for reporting scale development and validation results (Cabrer-Nguyen, 2010) was used as a framework for reporting the findings.

In step one, data screening was undertaken to determine if the data were suitable for factor analysis. Inter-item correlations were assessed to ensure correlations > 0.3 were observed (Tabachnic & Fidell, 2007) and the Determinant score was > 0.0001 (Yong & Pearce, 2013). In this study, the Kaiser–Meyer Olkin (KMO) measure of sampling adequacy and Bartlett's tests were computed to estimate the adequacy of the sample and item intercorrelations, with a KMO of greater than 0.5 considered sufficient for factor analysis to proceed (Yong & Pearce, 2013). During step 2, different factor extraction techniques were used to identify the method of extraction that produced the most parsimonious and meaningful factor solution (Pett et al. 2003). We initially selected PCA because this was the method used by Benzein et al. (2008); However, we later selected Principle Axis Factoring (PAF) because it produced a more meaningful and interpretable solution. PCA is better suited

to data reduction (Tabachnick & Fidell, 2007) and is not ideal for fully understanding the latent factors that account for the shared variance among items (Cabrera-Nguyen, 2010). In step 3, four criteria were used to decide on the number of factors to retain: Kaiser's Criteria (eigenvalue > 1 rule; Kaiser, 1960), scree test (Cattell, 2012), cumulative percentage of variance extracted and parallel analysis (Horn, 1965). Factor loadings > 0.32, which represent approximately 10% of shared variance between item and factor was used as a threshold for adequate loading, which is consistent with other established guidelines (Comrey & Lee, 1992; Hair & Black, 2010; Tabachnick & Fidell, 2007). Item-to-scale-total correlations and Cronbach's coefficient alphas were calculated to estimate the internal consistency of the instrument. In step four, factors were rotated for better interpretation and the oblique rotation, particularly the direct oblimin rotation was used because a theoretically-grounded expectation existed that the factors would correlate with each other (Field, 2009; Williams et al. 2010). The fifth and final step in EFA was interpreting the identified factors.

RESULTS

Response rate and sociodemographic data

A total of 476 surveys were distributed and 221 were returned giving a total response rate of 46.4%. As shown in Table 1, most participants was registered nurses, female and were aged from 21-69 years with a mean age of 41.0 (SD 11.7) years. Approximately one-quarter of the nurses had a post-graduate qualification. Few nurses identified as working in specialty specific areas.

Of the surveys returned, nine (4%) cases had one or more values Missing Completely At Random (MCAR) as confirmed by Little's MCAR test: Chi-Squared = 187.59 (DF = 173; $p < .21$). A complete case approach (Hair et al. 2010) to missing data was applied leaving a final sample for analysis of n = 212 (44.5%). This final sample produced an acceptable ratio of cases to variables of 8.5:1.

Results of principal component analysis

A PCA was first conducted on the 26 items with oblique (oblimin) rotation. Data screening showed the measure of sampling adequacy to be sufficiently high for factor analysis (KMO was 0.89), while Bartlett's Test of Sphericitiy, $\chi^2 = 2413.74$ ($p < 0.001$) indicated that correlations between items were sufficiently large for PCA (Williams et al. 2010). An initial analysis identified the potential number of factors. Parallel analysis suggested a two factor structure, while the Kaiser's Criteria and cumulative percentage of variance extracted suggested a five factor structure. The scree plot was slightly ambiguous and showed inflections that would justify six factors. As we were unable to obtain a statistically or theoretically sound solution using PCA, we undertook Principal Axis Factoring (PAF) on all items in the revised FINC-NA.

Results of PAF analysis

PAF was conducted on the 26 items with oblique (oblimin) rotation. Five factors with eigenvalues greater than 1 were retained accounting for > 58.82% of the total variance and parallel analysis provided little insight into how many factors to extract and retain. The generation of a scree-plot suggested a five or possibly six factor solution. Initially, based on a loading criterion of ≥0.32 for retaining items, one item (Item 13) was removed from further analysis. Subsequently, several factor solutions were explored that extracted between two and six factors. As a part of the analysis process, to maximise interpretability items that cross-loaded (≥ 0.40 across more than one factor) were removed (Garson, 2010). Four items were removed (Item 1, 9, 12 and 25) for loading <0.32. Five items cross loaded on a secondary factor but only one item (Item 24) loaded > 0.40 and was removed so that each factor was defined by a distinct cluster of highly loading items (Young & Pearce, 2013).

The final 20 items which were retained for analysis yielded a four-factor solution (eigenvalues > 1), accounting for 58.27% of the total variance. The factor loadings for the four-factor structure with the estimated alphas for each factor are reported in Table 2. Also included in Table 2 are the item-to-factor total correlations, all of which were satisfactory (> 0.30), indicating a minimally adequate degree of shared variation between the retained items (Pett et al. 2003).

The four resultant factors were descriptively labelled, which involved giving names that best represented the items that constitute factors (Young & Pearce, 2013). Items in factor one and two loaded in a very similar manner to the subscales Fam–RNC and Fam–B reported in the 26-item FINC-NA (Saveman et al. 2011); hence, their descriptive labels were retained. The remaining items loaded to different factors and varied in strength when compared to the 26-item FINC-NA and were relabelled. Our third factor consisted of four items that focused on family members being invited by nurses to contribute to patient care or care-planning and was labelled ‘promoting family involvement’ (Prom-FI). Factor four also consisted of four items that reflected nurses fostering problem solving processes in families and was labelled ‘building resilient families’ (Bld- RF). The item-to-subscale total correlations indicated reliability with .856 (factor 1), .745 (factor 2), .810 (factor 3) and .690 (factor 4). The inter-factor correlations are presented in Table 3. The correlation between factors one and two, three and four are moderate, while correlations between factors two and three and three and four are weak suggesting the 20-item instrument should not be combined for a total score. The correlation between factors two and four is the weakest

DISCUSSION

The psychometric properties of the 26-item FINC-NA were assessed by performing factor analysis on the data and estimating internal consistency. This is the first time such an analysis of the revised instrument has been conducted with a native English-speaking sample. The psychometric testing of the FINC-NA with this data set led to the removal of several items

and relabeling of factors. Further evaluation of the factor structure is required in a different sample.

Benzien et al. (2008) were the first to propose a measurement instrument to evaluate nurses' attitudes toward involving family in care in the acute adult hospital setting. Saveman et al. (2011) subsequently made minor refinements to this scale by increasing the potential variability in the items responses and assessed its psychometric properties in a new sample of Swedish nurses. A key validity issue in new or revised scales is the replication of the hypothesized factor structure using novel samples (Marshall et al. 2007).

EFA is recommended to assess the construct validity during the initial development of an instrument and to examine the underlying dimensionality of the item set (Worthington & Whittaker, 2006). While researchers generally favor factor analytic techniques such as PAF (Bentler & Kano, 1990; Tabachnick & Fidell, 2007), our decision for beginning data analysis with PCA was to follow the approach taken to develop the FINC - NA instrument (Benzein et al. 2008). However, we changed to PAF after the PCA failed to produce a meaningful solution. There are several reasons this may have occurred. In contrast to PCA, the factors in factor analysis are conceptualized as real world entities rather than simple geometrical abstractions that may not map easily onto real world phenomena (University of Wisconsin-Madison, 2010). PCA is also not well suited to self-report data in that it assumes all of the observed variance is potentially common and does not accommodate measurement error (Bandalos & Boehm-Kaufman, 2009). In PAF, only the shared variances is analyzed and thus when measurement error is likely to be present (as in all self-report data) this is a more appropriate approach (Tucker & MacCallum, 1997).

Further, it is worth noting that the level of dependence seen between the factors in this study supports the conclusion that the factors being measured were correlated to some degree and the decision to use the oblique (oblimin) rotation method was correct. On a theoretical level, the very weak correlations seen between factors two and three and two and four is not surprising as these factors are mostly unrelated. We would not expect a nurse who views family members as being burdensome to also see them as having capacity to support themselves and invite them to participate in nursing care.

The current results suggest that the interpretation and labelling of factors by Benzein et al. (2008) requires further consideration. Five items were deleted from the instrument due to insufficient primary loadings and one item that cross loaded > 0.4 was also removed. Further, our results showed that half of the items loading on factor four had a modest cross-loading on one other factor. The possible reasons for inadequate loading or cross-loading are many. There may be a fundamental flaw with item construction, the design of the instrument or the understanding of the concept of nurse's attitudes about caring for families (Costello & Osborne, 2005). Items that are poorly worded or not central to a clearly articulated construct will introduce potential sources of error variance, reducing the strength of correlations among items (Worthington & Whittaker, 2006). Items 16 and 19 loaded to the first factor (Fam-RNC) and fourth factor (which we labelled 'building resilient families) and reflect nurses'

seeking information from families. This notion of information sharing aligned closely with the eight items that loaded to Fam-RC, therefore, items 16 and 19 could be revised so they are more clearly differentiated from the other factors. In addition, the current results showed that items for factors one and two loaded in a similar manner to the subscales Fam–RNC and Fam–B when compared to Saveman et al. (2011). However, in the remaining two factors items loaded to different factors and their strength varied when compared to Saveman et al. (2011) supporting our decision to relabel these as new constructs.

The psychometric properties of the Spanish version of the original FINC-NA were reported recently (Pascual et al. 2014) in a sample of pediatric nurses. Their results are not comparable to our study because the data set is not consistent with the intent of the tool which is to measure nurses' attitudes towards family in adult acute clinical settings (Saveman et al. 2011). The final factor structure achieved in our study indicates that the instrument measures four aspects of nurses' attitudes about the importance of families in nursing care, however, these core constructs differ to those described by Benzein et al. (2008) and Saveman et al. (2011). A noteworthy finding of the current study is that our correlation analysis showed that only a quarter of the factors had any degree of shared variance. Therefore, we believe the FINC-NA instrument is not unidimensional and combining the individual subscale scores to report a total FINC-NA score is flawed. In our data set, the shared variance across the four factors was slight indicating the factors are largely distinct and should not be combined to produce a total score. Therefore, to clarify the use of this instrument as a total score and/or as subscales confirmatory factor analysis using the 20-item FINC-NA in a different sample of Australian adult acute care nurses is recommended to confirm the results of our EFA.

LIMITATIONS

We recognize this study has both strengths and limitations. This study is limited as the sample was from only one site, however, it opens the way for further validation of the FINC-NA to inform its suitability for use in the Australian acute adult hospital setting. A strength is

that we were able to achieve a sample response rate of 46.4% that could have been improved to enhance population representation. However, as the data reported here are for the purpose of determining factor structure of the revised FINC-NA rather than the reporting participant scores, the sample size of 212 was sufficient for the number of items in the scale where there was more than5 cases per item (Pett et al. 2003). In this current study we used a geographically different sample than the sample used by Saveman et al. (2011) and cultural differences in responding to Likert scales have been reported (Lee et al. 2002). In developing the original instrument, items were reviewed by several groups of Swedish Registered Nurses; hence, it could be argued that minor English language structure variations (Biber & Conrad 2014) had an impact on item clarity in our sample increasing respondent bias. The recognition that nurses' attitudes can either help or hinder family involvement in patient care gives weight to the necessity for further research with understanding the beliefs and attitudes nurses hold towards family collaborating in care a focus.

CONCLUSION

The removal of several items and relabeling of factors suggests that some refinement in items was warranted for the FINC-NA. The 20-item FINC-NA contained four largely distinct factors, however, residual cross-loading issues on the fourth factor suggests that further revisions of items in the instrument may be required. Involving family in healthcare enhances safety and quality, while the attitudes nurses hold may influence the level of family involvement in patient care. Following further evaluation this instrument may prove suitable to measure specific interventions that are targeted at changing nurses' attitudes to promote patient and family centered practices in hospitals.

Author Contributions:

All authors have agreed on the final version and meet at least one of the following criteria (recommended by the ICMJE*):

1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;

2) drafting the article or revising it critically for important intellectual content.

* http://www.icmje.org/recommendations/

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Table 1. Participants' Demographic Characteristics (n = 212)

Characteristics	n (%)
Gender	
Female	177 (83.5)
Male	33 (15.6)
Other	2 (0.9)
Role	
Enrolled nurse	16 (7.5)
Registered nurse	196 (92.5)
Hospital ward area	
Critical care	24 (11.3)
Emergency	24 (11.3)
Medical and surgical	134 (63.2)
Mental health	30 (14.2)
Member of professional organization (n = 206)*6 missing	
Yes	93 (43.9)
No	113 (53.3)
Highest qualification (n = 210)* 2 missing	
Hospital Certificate	21 (9.9)
TAFE Diploma/certificate	15 (7.1)
Bachelor degree	114 (53.8)
Post Graduate Certificate	38 (17.9)
Master degree or higher	22 (10.4)
Documents concerning family members (n = 206)*6 missing	
Yes	108 (50.9)

No	98 (46.2)
Had a seriously ill family member (n = 208)*4 missing	
Yes	166 (78.3)
No	42 (19.8)

Table 2. Oblimin rotated pattern matrix (n = 212)

Item number	Item	Factor loadings				Item-to-total Correlations
		Fam-RNC	Fam-B	Prom - FI	Bld - RF	
22.	It is important to spend time with families	**.74**	.00	-.59	.11	.63
20.	Getting involved with families gives me a feeling of being useful	**.74**	.00	-.17	.17	.58
5.	The presence of family members is important to me as a nurse	**.62**	.15	.22	-.17	.66
7.	The presence of family members gives me a feeling of security	**.54**	.07	.22	-.10	.57
21.	I gain a lot of worthwhile knowledge from families which I can use in my work	**.52**	.02	0.4	.12	.54
3.	A good relationship with family members gives me job satisfaction	**.48**	-.12	.26	-.06	.45
18.	I consider family members as co-operating partners	**.41**	.20	.00	**.34**	.66
10.	The presence of family members eases my workload	**.34**	.23	.10	.04	.53

26.	The presence of family members makes me feel stressed	-.03	**.87**	-.01	-.08	.43
23.	The presence of family members makes me feel that they are checking up on me	-.01	**.75**	-.09	-0.1	.36
2.	The presence of family members holds me back in my work	.02	**.58**	.06	-.07	.39
8.	I do not have time to take care of families	.04	**.41**	.08	.17	.45
4.	Family members should be invited to actively take part in the patient's nursing care	.05	-.00	**.79**	-.13	.47
15.	I invite family members to actively take part in the patient's care	-.10	.11	**.64**	**.34**	.61
11.	Family members should be invited to actively take part in planning patient care	.13	-.21	**.61**	.16	.60
6.	I ask family members to take part in discussions from the very first contact, when a patient comes into my care	.14	.08	**.47**	.13	.56
17.	I encourage families to use their own resources so that they have the optimal possibilities to cope with situations by themselves	.10	-.10	.04	**.51**	.34
14.	I invite family members to have a conversation at the end of the care period	.08	.02	.16	**.46**	.47
16.	I ask families how I can support them	**.34**	.15	-.00	**.37**	.60
19.	I invite family members to speak about changes in the patient's condition	.10	**.33**	.14	**.37**	.62
Eigenvalues		7.16	1.98	1.39	1.1	
% of variance		35.84	9.9	6.9	5.5	

α		.85	.74	.81	.69	

Note: Bold factor loadings > .32 are defined as significant; Fam-RNC = Family as a resource in nursing care; Fam-B = Family as a burden; Prom – FI = Promoting family involvement; Bld-RF = Building resilient families

Table 3. Factor correlation Matrix

Factor	Fam-RNC	Fam-B	Prom -FI	Bld - RF	Total Scale
Fam-RNC	1.000				
Fam-B	.36	1.000			
Prom -FI	.53	.28	1.000		
Bld - RF	.48	.23	.26	1.000	
Total scale	.85	.74	.81	.69	1.000

Note: Fam-RNC = Family as a resource in nursing care; Fam-B = Family as a burden; Prom – FI = Promoting family involvement; Bld-RF = Building resilient families. All correlations are significant at level of $p < 0.001$.

General statements about the importance of the family in nursing care

		Strongly disagree				Strongly agree
1	It is important to find out what family members a patient has	1	2	3	4	5
2	The presence of family members holds me back in my work	1	2	3	4	5
3	A good relationship with family members gives me job satisfaction	1	2	3	4	5
4	Family members should be invited to actively take part in the patient's nursing care	1	2	3	4	5
5	The presence of family members is important to me as a nurse	1	2	3	4	5

Figure 1. Families' Importance In Nursing Care – Nurses' Attitudes (FINC-NA) (Saveman *et al*. 2011). Note: Complete instrument is available from the original author and reprinted with permission.

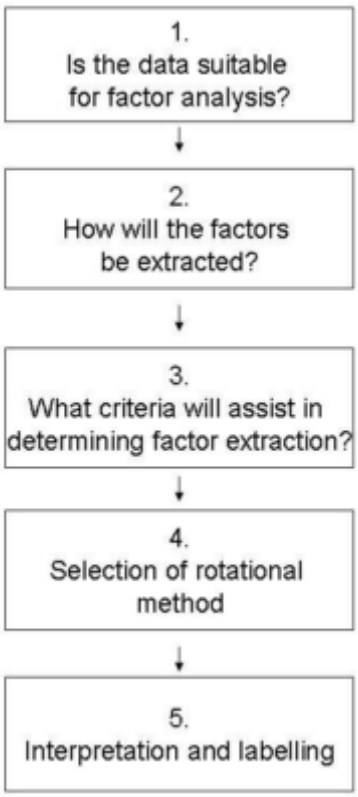

Figure 2. Five-Step Exploratory Factor Analysis Protocol (Williams *et al*. 2010)