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AN ANALYSIS OF ROLE STRESS AND TURNOVER INTENTION

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ABRELO 001

A dissertation submitted in partial fulfilment of the requirements for the award of the Degree of Master of Commerce in Organisational Psychology

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COMPULSORY DECLARATION:

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works of other people has been attributed, and has been cited and referenced.

Signature: Signed by candidate Date: *1/05/2008*

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ABSTRACT

The primary purpose of the study was to analyse the relationship between role stress and turnover intention among registered professional nurses in three public academic hospitals in the Western Cape. It further examined the dimensions of role stress to establish a hierarchy of these variables as experienced by the sample population. Role stress comprised of the following dimensions: role conflict, role ambiguity, role overload, resources inadequacy, skills inadequacy and constant change. 419 respondents completed the survey questionnaire, a response rate of 44.1 %. The results revealed that, overall, turnover intention was relatively low, on all three dimensions of turnover intention: organisation, profession and emigration. Statistical applications in the form of correlations and multiple regression analysis did prove significant correlations between all the dimensions of role stress and turnover intention. Role conflict proved to be the strongest predictor of organisational turnover intention. The study pointed to the need to investigate the factors which would, despite the experience of role stress, induce respondents to remain in the organisation and the profession.

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CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW

The problem of skills shortages in the nursing profession has been confirmed in both local and international studies (Andrews, 2003; Hancock, 1996; Homs & Kinicki, 2001; Janiszewski, 2003; Tierney, 2003). The major and most concerning impact of the shortages are evidenced by the lack of service delivery within this sector.

It is interesting to note that nurses who are quitting their jobs or are intending to quit their jobs are not leaving the nursing profession. These professionals are changing their employers, but still remain within the nursing profession (Andrews, 2003). They are leaving to work elsewhere, whether that is in the private sector, different fields or leaving the country for better opportunities (Janiszewski, 2003). These findings could indicate that nurses working for large institutions or state institutions are experiencing problems or dissatisfaction with their employers and hence moving to other work environments or smaller private hospitals.

The literature later in this chapter indicates that nurses are experiencing difficulties with their work, work environment and conditions of employment, which, according to the findings of the research conducted, could in part be attributed to relatively high levels of workplace stress. Workplace stress is further associated with turnover intention and actual turnover for members of this professional group.

Researchers have identified a persistent shortage in qualified nursing staff in both the global (Andrews, 2003; Hancock, 1996; Homs & Kinicki, 2001; Janiszewski, 2003; Tierney, 2003) and South African contexts (Jacobs & Roodt, 2007; Koekemoer & Mostert, 2006; Schrecker & Labonte, 2004).

A preliminary review of the relevant literature revealed that role stress was regarded by previous researchers as an important variable in turnover intention (Boshoff, Van Wyk, Hoole & Owen, 2002; Chang, Hancock, Johnson, Daly & Jackson, 2005; Coetzer & Rothmann, 2006; De Bruin & Taylor, 2005; Fang & Baba, 1993; Kinman & Jones, 2005; Spector, Cooper & Aguilar-Vafaie, 2002; Tracy & Johnson, 1983; Vakola & Nikolaou, 2005).

The research question on which this study was based consequently focussed on the relationship between role stress (the independent variable) and turnover intention (the dependent variable) among registered professional nurses at three academic public hospitals in the Western Cape, South Africa.

Role stress is an over-arching term for a variety of specific workplace stressors or dimensions. Previous studies (Elloy & Smith, 2003; Lait & Wallace, 2002; Pandey & Kumar, 2002; Rizzo, House & Lirtzman, 1970; Siegall, 2000) identified role ambiguity, role conflict and role overload as the most prevalent dimensions to role stress. Because of conditions in South African hospitals, where budgets have been cut (Schrecker & Labonte; 2004) and organisations are often in a state of flux, (Robbins & Judge; 2007), resource inadequacy and constant change were also operationalised in this study as dimensions of role stress and their relationship to turnover intention explored.

This chapter surveys the literature on nursing shortages, turnover intention, role stress and the dimensions of role stress in greater depth in order to confirm the validity of the problem statement, the research question, the stated purpose and the research instrument. Finally, studies dealing specifically with turnover intention and role stress in the health sector are reviewed.

The present study builds on similar studies that have been conducted internationally and locally (Boshoff, et al. 2002; Chiu, Chien, Lin & Hsiao, 2005; Sourdif, 2004). The vast majority of these studies focussed on the antecedents to job stress as predictors of turnover intentions. However, none of these studies sought to analyse the relative influence of various antecedents to role stress on turnover intention, which became the focus of the present study.

The specific purpose was to analyse the relative impact of the major dimensions to role stress, as identified above and operationalised in this study, on turnover intention. In the study the dimensions of role stress were operationalised as: role conflict, role ambiguity, role overload, resources inadequacy, skills inadequacy and constant change.

SHORTAGE OF REGISTERED PROFESSIONAL NURSES

The shortage of registered professional nurses globally has been well documented in studies (Andrews, 2003; Chan & Morrison, 2000; Chiu, et al. 2005; Morrell, 2005). These researchers also identified a causal relationship between turnover, turnover intention and role stress. In South Africa similar studies within the health sector, confirmed that chronic shortages of professional registered nurses exist (Jacobs & Roodt, 2007; Koekemoer & Mostert, 2006; Schrecker & Labonte, 2004). Staff shortages have been documented in three issues of the South African Nursing Journal, Nursing Update (July, August, September, 2007).

In 2007, The Consensus Research Group (CRG) conducted a global survey for the International Council of Nurses about the perceptions and opinions of nurses on a number of crucial healthcare issues. The CRG conducted a telephonic survey, which was carried out on a sample of 1000 nurses in ten countries across Europe, North America, Asia and Africa. The major findings of the study related to nurses' discontent within the workplace.

The study identified work overload, long working hours, unnecessary administrative burdens, reduced patient care, inadequate compensation and the skills shortage of professional nursing staff as reasons for the dissatisfaction within their current working environment. The shortage of professional nursing staff was largely attributed to migration and relocation. The survey also revealed that most nurses were happy within their chosen profession, but that the job description of the nurse had changed and coping within this new environment was becoming increasingly challenging (Nursing Update, July 2007).

Similar trends have been identified in Sweden and Singapore. Chan and Morrison (2000) identified a shortage of registered nurses in Singapore which they viewed as having a negative impact on service delivery, while Gardulf, Söderström, Orton, Eriksson, Arnetz and Nördström (2005) identified a shortage of and a high turnover rate among registered nurses in Sweden. They singled out the Huddinge University Hospital in Stockholm where, in 2002, two hundred and one positions out of a total of approximately two thousand were vacant.

In a study that developed a typology of nursing turnover, Morrell (2004) found that the management of nursing supply is becoming a continuing problem in the United Kingdom. He states that, although many nurses merely move from one organisation to another, this migration still proves costly and affects the care of patients.

The global shortage as described above is mirrored within the South African context (Jacobs & Roodt, 2007; Schrecker & Labonte, 2004). The study conducted by Jacobs and Roodt (2007), investigated knowledge sharing and turnover intention among registered nurses at five private hospitals and four provincial hospitals. They found that the nursing profession was facing a crisis and that nurses were leaving the country in order to take up positions overseas.

The chronic shortage of registered professional nurses is confirmed by the work of Schrecker and Labonte (2004) who postulate that rapid outmigration of health professionals, budget constraints and the impact of HIV / AIDS are some of the reasons for the brain drain within the public health system in Southern Africa.

In an article titled *Challenges Facing Nursing* (Nursing Update, August 2007), the Quality Assurance Manager within the health sector, N.V. Mokhele, confirms that the South African health service is losing nurses to other countries and advises nurses to question unreasonable standards, the poor environment and staff shortages.

The delivery of health care is, together with education, essential for the prosperity of any society (Bendix, 2004). The identified shortage of registered professional nurses in South Africa threatens such prosperity. A shortage of human resources impacts negatively on the remaining employees, as well as on service delivery (Janiszewski, 2003; Lu, While & Barriball, 2005; May, Bazzoll & Gerland, 2006; Morrell, 2004).

This study sought to confirm the positive correlations between role stress and turnover intention and thereafter to establish the influence of each of the operationalised components of role stress. The constructs explored and defined in this study are reviewed below.

TURNOVER INTENTION

Defining the Construct

The construct turnover intention has been explored by a significant body of researchers (Ahuja, Chudoba, Kacmar, McKnight & George, 2007; Boshoff, et al. 2002; Campbell & Campbell, 2003; Chan & Morrison, 2000; Fang & Baba, 1993; Hart, 2005; Jacobs & Roodt, 2007; Janssen, De Jonge & Bakker, 1999; Lambert, Hogan & Barton, 2001; Morrell, 2004; Sager, Griffeth & Hom, 1998). Despite slight semantic differences, a common understanding of the construct exists.

The majority of these researchers conform to Boshoff, et al. (2002) definition, which describes intention to quit as the strength of the employee's view that s/he will leave the current place of employment.

Fang and Baba (1993) modified this definition by linking the intention to leave to a continuously aversive working environment.

Sager, et al. (1998) refer to different meanings and dimensionality of what they describe as turnover cognition. These include thinking of quitting, intent to search and intention to quit.

In this study the construct turnover intention is understood as a general view that the employee will leave, which encapsulates all three dimensions of turnover cognition as identified by Sager, et al. (1998).

Although Janssen et al. (1999) asserts that turnover intention is closely related to turnover, other studies suggest that a clear distinction needs to be made between turnover intention and actual turnover (Campbell & Campbell, 2003; Lambert, et al., 2001). Campbell and Campbell (2003) state that quit intentions are more directly controlled by the individual and, though they are significantly related to turnover, the relationship is not perfect as a number of external factors such as the availability of other jobs may prevent the person from actually leaving.

Similarly Lambert et al., (2001) claim that more attention should be given to the intention to quit than to actual turnover, because, if this is better understood, preventative measures can be taken. Chan and Morrison, (2000) postulate that, because intention to stay or leave is an indicator of future plans, an understanding of such intention may provide the opportunity for timeous interventions before the fact. Also, persons intending to quit engage in counterproductive work behaviours resulting in lessened productivity (Judge & Robbins; 2007). Timeous interventions may counteract these negative effects.

Measurement of Turnover Intention

Sager, et al. (1998) conducted a comparative analysis of studies on turnover intention conducted over the previous ten years. Most of the studies; Ajzen, 1991; Arnold & Feldman, 1982; Hom & Griffeth, 1991; Jaros, Jermier, Koehler, & Sincich, 1993; Mobley, Griffeth, Hand & Meglino, 1979; Steel & Ovalle, 1984 (as cited in Sager, et al. 1998) refer to Bluedorn's (1982), Lee & Mowday's (1987), and Hackman & Oldham's (1976) measurement construct for turnover intention and turnover cognition..

Globally research into turnover intention has used Bluedorn's Staying Leaving Index (SLI) as the best indicator of intention to quit (Sager, et al. 1998; Lee & Mowday, 1987; Mowday, Koberg, & McArthur, 1984, Ahuja, et al. 2007; Chiu, et al. 2006). In South Africa Boshoff, et al. (2002) and Jacobs and Roodt (2007) adapted Bluedorn's SLI in their research on turnover intention.

Sager, et al., (1998), who made extensive use of previous research by the authors above, also identified Bluedorn's (1982) Staying Leaving Index (SLI) as one of the few validated measures of intention to quit. However, they are critical of using single items indicators with, according to the researchers, unknown construct validity and which measure only one dimension of turnover intention. They concluded that any measurement instrument should incorporate temporal elements, such as thinking of quitting, intention to search and intention to quit, into the intention to leave. The instrument used in their study entitled, *A Comparison of Structural Models Representing Turnover Cognition*, (Sager, et al., 1998) had 15-items covering the various dimensionalities of turnover cognition. Different Likert scales were applied to each dimension.

Jacobs and Roodt (2007) concur with Sager et. al.'s criticism of unidimensional indicators. In their study on turnover intentions, the construct was measured using 14 items which were linked to Bluedorn's SLI.

Sager et al.'s (1998) precept has also been followed by Ahuja, et al. (2007) who used Moore's (2000) 4-item instrument and both a 5-point and 7-point scale. Ahuja et al.'s (2007) questions were based on Bluedorn's SLI. Similarly Chiu, et al. (2006) used 4-items based on Bluedorn's research and a 5-point Likert scale.

Campbell and Campbell's (2003) research on global versus facet predictors of intention to quit examined the relationship between intention to quit and global measures of job satisfaction and organisational commitment. The dependent variable; intention to quit, adapted from Hackman and Oldham (1976) and also based on the SLI, was measured using 4-items, but, having found that one item loaded ambiguously, they dropped this item from the analysis. The Cronbach alpha coefficient for the remaining three items was 0.76.

As part of a much larger study among nurses at Huddinge University Hospital, Gardulf, et al. (2005), investigated the reasons why nurses at a university hospital wanted to quit their jobs. The researchers used 2-items to measure possible turnover intention and motives for wanting to leave.

By contrast, Janssen, et al. (1999) used a single item measurement, asking respondents whether they were planning to leave the organisation within a year. Responses were measured on a 6-point scale. These researchers were satisfied that the one item measure satisfactorily identified individuals with intention to leave.

In support of the single item measurement for turnover cognition, Fang and Baba (1993) conducted a comparative study among nurses across five specialised hospitals in Canada. The variable turnover intention, which was adapted from Mobley's 1977 turnover cognition, commenced with two questions, one relating to past intention and the other to future intention, measured on a 4-point scale. However, a high correlation existed between the two dimensions and, consequently, as in Janssen et al.'s (1999) study, only responses to the first question, which measured past intention, were analysed.

An argument can be made for measuring the different dimensions of intention to quit as identified by Sager, et al. (1998). Thus, although the one-item measurement has been regarded by some researchers as sufficient, the dimensional approach would necessitate that at least three to four items be used.

The measurement instrument used in this study was based on that developed by Bagraim (2005) which measured professional, organisational and emigration intention, as well as on Bluedorn's (1982) SLI. The latter has been used successfully in studies on turnover and role stress such as those conducted by Ahuja, et al. (2007), Chiu, et al. (2006), Jacobs and Roodt (2007), Lee and Mowday (1987), Mowday, et al. (1984) and Sager, et al. (1998).

ROLE STRESS

Certain studies have concentrated on role stress as an important antecedent to turnover intention (Bluedorn, 1982; Boshoff, et al. 2002; Chang, et al. 2005; Coetzer & Rothmann, 2006; De Bruin & Taylor, 2005; Fang & Baba, 1993; Kinman, & Jones, 2005; Rizzo, et al. 1970; Spector, et al. 2002; Tracy & Johnson, 1983; Vakola & Nikolaou, 2005). These studies confirmed a significant causal relationship between job / role stress and turnover intention. High levels of stress were positively linked to turnover intention.

In order to fully conceptualise the construct role stress, it was necessary firstly to place it within the context of job stress and to analyse the latter as a form of stress in general. In this respect the studies of Beehr and Glazer (2005), Beehr and Newman (1978), Chiu, et al. (2005), De Bruin & Taylor (2005), Elangovan (2001), Fang and Baba (1993), Janssen, et al. (1999) and Rothmann, et al. (2005) were reviewed.

While certain researchers (De Bruin & Taylor, 2005; Chui, et al. 2005; Elloy & Smith, 2003; Fang & Baba, 1993; Morrell, 2004) focus on job stress as a component of stress and tend to use the two concepts interchangeably, Chang and Hancock (2003), Chang, et al. (2005) do differentiate between general work related stress and role stress.

Instead of measuring role stress as a unitary construct, many researchers (Chang, et al. 2005; Pandey & Kumar, 2002; Singh, 1993; Singh & Rhoads, 1991; Siegall, 2000) have chosen to measure this construct in terms of its dimensions. Among these dimensions are those identified by Rizzo, et al. (1970), namely role conflict and role ambiguity.

Elloy and Smith (2003) also measured role overload as a dimension of role stress, as did Janssen, et al. (1999), and Bagraim (2005). Resource inadequacy and constant change, while not dealt with extensively in the literature, were identified as antecedents of role stress by Chan and Morrison (2000) and Price (2001), as well as by Caplan, Cobb and French (1975).

Bordia, Hunt, Paulsen, Tourish and DiFonzo (2004) specifically mention constant change as a job stress factor. This construct was also included in research conducted by Behrman (2006).

Contextualisation of Role Stress

The construct role stress cannot be fully understood without placing it within the theoretical conceptualisation of stress and, in particular, job stress as a sub component of stress (Beehr & Glazer, 2005).

Stress, in the majority of stress theories and models, is described as a series of factors that have their beginnings in one's actual surroundings and conclude with the individual's reaction (Beehr & Glazer, 2005; Beehr & Newman, 1978; Chiu, et al. 2005; De Bruin & Taylor, 2005; Elangovan, 2001; Fang & Baba, 1993; Janssen, et al. 1999; Rothmann, et al. 2005).

De Bruin and Taylor (2005), while noting that it is difficult to find a single definition of stress, select Schlebusch's (1998, p. 266, as cited in De Bruin & Taylor, 2005) conceptualisation of psychological stress as "An interaction of several variables involving a particular relationship between a person and the environment, which is appraised by the person as taxing or exceeding coping resources and endangering well-being."

Stress is a psychological and physical condition which may occur or have its origin in particular social contexts. Job stress is stress which arises because of particular conditions or interactions in the work situation (Fang & Baba, 1993).

Beehr and Newman (1978) also concede that there is no universally agreed definition of stress among behavioural scientists. These researchers focus particularly on job stress and offer as general definition of this construct that job stress entails a situation in which job related factors interact with the employee to either enhance or negatively affect that person's psychological or physiological condition so that s/he deviates from normal functioning. Their study covered a wide range of what they term facets of job stress, such as the environmental, process and personal facets. Under the organisational consequences of job stress they mention employee withdrawal in the form of absenteeism and voluntary turnover.

The above researchers' refer to the conclusion reached by McLean (1974, as cited in Beehr & Newman, 1978) that stress is neither stimulus nor intervening variable but an overarching term for a problem area which deals with any demands that tax the system.

They state that the job stress phenomenon comprises complicated interactions between persons and environment; thus the multi-faceted study referred to above.

Important in the present context is one of the items under environmental facets, namely role demands or expectations, under which they include role overload, role conflict, role ambiguity, formal and informal relationships among role set members and psychological contracts perceived by the individual.

In a study at a university hospital, the purpose of which was to establish the prevalence or otherwise of the intention to quit among nurses at the hospital and the reasons for such intention, one of the independent variables identified was the existence of strenuous and stressful work; this in a general stress related and not in a specifically role stress related context. The respondents cited stressful work as one of the main reasons for contemplating resignation (Gardulf, et al. 2005).

Janssen, et al. (1999) tested a theoretically derived model of specific relationships between work stressors and stress reactions among nurses at a Dutch hospital. The model also looked at three important stress reactions, namely a diminished intrinsic work motivation, occupational burnout and intention to quit. The hypothesis that is relevant to the present study was that propensity to leave is primarily determined by conditions of employment. The primary objective of the research was a refining of the understanding of the tripartite relationship between intrinsic work motivation, occupational burnout and intention to quit.

In support of the above Fang and Baba (1993), who identify job satisfaction and organisational commitment as the direct causes of intention to quit, concede that, indirectly, intention to quit is a consequence of stress.

The Construct Role Stress

While it is evident that job stress is a complex multi-faceted construct, a significant body of research (Boshoff, et al. 2002; Chang, et al. 2005; Coetzer & Rothmann, 2006; De Bruin & Taylor, 2005; Fang & Baba, 1993; Kinman & Jones, 2005; Rizzo, et al. 1970; Spector, et al., 2002; Tracy & Johnson, 1983; Vakola & Nikolaou, 2005), has concentrated specifically on role stress as an important antecedent to turnover intention.

Since most of the literature surveyed conceptualises role stress in terms of its sub-components or dimensions, the only definitions of role stress per se are those of Chang and Hancock (2003) and Chang, et al. (2005). In the first study role stress is described as the disparity between the individuals' perception of his / her role and that which is actually being achieved in performing that role, while the second study differentiates between stress, work stress and role stress. According to this study stress is experienced when resources are insufficient to meet perceived situations. Work stressors are described as existing conditions in either the job or the organisation which require the individual to make certain adaptations. Role stress occurs when expectations of the role are inversely related to actual performance.

It would appear that role stress is more easily conceptualised and its relationship to turnover intention would be more clearly measured if the construct role stress is deconstructed into its most important dimensions.

In a study among American and Canadian nurses Fang and Baba (1993) postulated that role factors such as role ambiguity, role conflict and role overload are important antecedents to job stress. Their study concluded that there was a significant relationship between all three-role constructs, namely role ambiguity, role conflict, role overload and stress and that this in turn influenced turnover intentions. They also found that job satisfaction was a mediator between job stress and turnover intention.

A study by De Bruin and Taylor (2005) identified role ambiguity, relationships, workload, autonomy, bureaucracy, tools and equipment, physical environment, career advancement / job security and work / home interface as precursors of job stress.

Chang et al., (2005) relate role stress to, among others, modes of organising work. Their occupational questionnaire included facets such as work overload, high responsibility and problems in interpersonal relationships. They found workload to be a dominant factor in role stress and strain.

Siegall (2000) conducted a study in which he integrated Lazarus and Folkman's (1984) cognitive model of stress with the perception of threat. He found role conflict and role ambiguity to have to have a significant effect on both personal and organisational outcomes. His stress appraisal study revealed that role conflict was not significantly related to intent to leave, but role ambiguity was. He then developed another measurement which included what he termed role conflict distress items and role ambiguity distress items.

The study conducted by Chang and Hancock (2003) used an adapted version of Khan's 1964 job related tension index and was aimed at measuring role ambiguity, role overload and role conflict among graduate nurses. These variables were in turn related to job satisfaction.

Role conflict, role ambiguity and role overload have been identified as major components of role stress, but research has also been conducted into the effect of other factors such as change and resources on job stress levels (Caplan, Cobb & French, 1975; Behrman, 2006).

Role Ambiguity

Rizzo, et al. (1970) revert to classical organisational theory in their explanation of role ambiguity. They state that all positions within an organisation should specify a set of tasks and responsibilities. From this it is derived that an employee who is uncertain about his authority and what is expected of him /her will suffer from role ambiguity. The items in their measurement of role ambiguity were consequently based on the certainty principle, particularly as regards duties, authority, allocation of time and relationships. They also looked at the existence of possible sanctions for wrong behaviour. Their study was placed firmly in the organisational context.

By contrast, Singh (1993) is critical of studies which view ambiguity as a unidimensional construct. In what is termed boundary role ambiguity he explains that role ambiguity is related to uncertainty about role definition, expectations, responsibility, tasks and behaviours, but that this should be viewed from a company, boss, customer, ethical, management, co-worker and family perspective. On this basis Singh and Rhoads (1991) developed the multi-ram scale for measuring role ambiguity. They also determined the degree to which variables such as feedback, autonomy and consideration affected role ambiguity.

Chang and Hancock (2003) explain objective ambiguity as having its origins in a shortage of information required for role definition and role performance and subjective ambiguity as related to the social and psychological facets in role performance. They relate role ambiguity particularly to the nursing profession where, as they state, each ward has its own personnel and management system.

Although cognisance has been taken of the multidimensional aspects of role ambiguity, the present study confined itself to Rizzo et al.'s (1970) explanation of this construct as outlined above.

Role Conflict

In their study on role conflict Rizzo, et al. (1970) initially refer to the principle of unity of command. While taking cognisance of Woodworth's (1965, as cited in Rizzo, et al. 1970) findings that the unity of command principle was not applicable in technically advanced processed firms, they also refer to the work of Zawacki (1963, as cited in Rizzo, et al. 1970), who found that role conflict among medical staff could be linked to the dual hierarchy of hospitals. Rizzo et. al.'s (1970, p. 156) adherence to the principle of unity of command is reflected by the type of statements contained in their questionnaire such as, "I work under incompatible policies and guidelines" and "I work with two or more groups who operate quite differently."

Rizzo et al. (1970) also relate role conflict to congruency and compatibility as regards the requirements of the role. In doing so, they refer extensively to Khan et al.'s (1964, as cited in Rizzo et al. 1970), categorisation of role conflict into person-role conflict, inter-role conflict, inter-sender conflict and intra-sender conflict. In their study all questions related to these four categories but not as distinct items. They state that certain items reflect both person-role conflict and intra-role conflict which, they say, is inter-role conflict for the person concerned. They further state that, because role conflict items suggest sanctions attached to role behaviour, they may be indicative of role ambiguity items.

It is this conflation of role ambiguity and role overload with role conflict which forms the basis of Pandey and Kumar's (2002) criticism of Rizzo et al.'s (1970) work. They define role conflict as a mental state, experience or perception of the individual resulting from two or more role expectations where compliance with the one would make it difficult, if not impossible, to comply with the other. They divide role conflict into the same four categories as Khan and Rizzo but provide clearer definitions of each category.

According to Pandey and Kumar (2002), intersender conflict occurs when the individual is faced with expectations incompatible with his / her role. Intra-role conflict is experienced when expectations in one role are incompatible with those in another role, for example work versus home. Intersender conflict is found when the individual is confronted by different expectations from senders in the same role set, while person-role conflict comes about when expectations within the work role are incompatible with the individuals' needs, aspirations and values. Pandey and Kumar's (2002) work mainly involved the development of more focussed scales to measure role conflict.

The present study accepted that, as a component of role stress, role conflict is linked to the other components such as role ambiguity and role overload, but that it can be distinguished by the incongruity of demands made on the individual, whether this is between roles, within roles or within the same role set.

Role Overload

Elloy and Smith (2003) state that work overload is experienced when the multiplicity of demands exceeds available resources. They divide overload into qualitative and quantitative overload, with qualitative overload referring to a situation where the level of difficulty of the task prevents its completion. Quantitative overload occurs when there are too many tasks that have to be completed. Their study was aimed at establishing whether dual career couples would experience higher stress levels and therefore higher role conflict, higher role ambiguity and higher role overload than single career couples. They found that stress levels among dual career couples were significantly higher than those of single career couples but did not directly link work overload to role stress. This notwithstanding, the study did reflect the relationship between stress and work overload.

A more definitive study was conducted by Janssen, et al. (1999) to establish the specific determinants of intrinsic work motivation, burnout and turnover intention among nurses at a Dutch hospital.

The term burnout is described by these researchers as an important stress reaction among health care professionals. In this context they refer to a study by Schaufeli (1990, as cited in Janssen et al. 1999), which linked burnout particularly strongly to work overload, social support and role stress.

Janssen et al. (1999) measured mental work overload by means of eight items with a 5-point response scale developed by De Jonge (1993). The items covered aspects such as working under time pressure, working hard and strenuous work. One of their major findings was that emotional exhaustion was mainly caused by a lack of social support from colleagues and demanding pressures of work such as time constraints and strenuous work. They recommend that managers can reduce or prevent emotional exhaustion by paying attention to workload. In their study all questions related to these four categories but not as distinct items.

In the present study, role or work overload was operationalised as time pressure and heaviness of workload.

Resource Inadequacy and Skills Inadequacy

As stated previously, much of the research into job stress concentrated on role conflict and role ambiguity and, to some extent, on role overload. Few researchers have investigated the effect of resource inadequacy on job stress. Chan and Morrison (2000) who conducted a study in a Singapore hospital into work related factors influencing employee turnover did find that 64, 9% of nurses who indicated intention to leave cited inadequate resources / equipment as among the major reasons for their decision.

Price (2001), who conducted an extensive longitudinal study into the determinants of voluntary turnover, does cite job stress as one of the twenty-two determinants surveyed. The study identified four types of stress, the first being resource inadequacy, the others being role ambiguity, role conflict and role overload.

Price (2001, p. 622) explains resource inadequacy as a lack of means to perform the job and in his study statements under this item included, "I do not have enough room to do my job", "I have difficulty getting supplies", "I have adequate equipment to do my job" and "I have enough support services to do my job."

It is evident that further investigation is required to establish whether a lack of resources is indeed a major contributor to job stress. In the current study resource inadequacy was operationalised to include not only the lack of physical resources but also the lack of support and the necessary training. This relates to Elloy and Smith (2003) findings that stress occurred when tasks were too difficult to perform, leading, in turn, to role overload.

Constant Change

Bordia, et al. (2004) state that not knowing how change will affect them, can be highly stressful to individuals and that uncertainty and stress lead to low morale, lack of job satisfaction and intention to leave. The researchers used the work of Schuler (1980, as cited in Bordia, et al. 2004), to assert that uncertainty is an aversive state. While these researchers confined their study to large-scale organisational change and its impact on the employees' job security and future prospects, they did use Milliken's (1987, as cited in Bordia, et al. 2004) definition of uncertainty as an individual's perceived inability to predict something accurately. Within the wider definition, provided by Milliken change and its concomitant, uncertainty, may be understood not only in the context of large scale organisational restructuring, but also as more continuous changes in the work environment such as changes in tasks which need to be performed, changes in responsibility, differing skills requirements and changing reporting structures.

Support for this assumption is to be found in the fact that Bordia et al.'s (2004) instrument did include items relating to uncertainty levels regarding the influence over changes in the job, the possibility of having to learn new job skills and possible changes in job role task.

The measurement instrument used in the present study was based on that developed by Bagraim (2005), Bluedorn (1982), Rizzo, et al. (1970), Caplan, et al. (1975) and Behrman (2006).

OTHER ANTECEDENTS TO TURNOVER INTENTION

Research into reasons for decision to quit has a relatively long history (Campbell & Campbell, 2003). Over the years various antecedents to the decision to quit other than those discussed above have been identified and subjected to empirical research. These included factors such as job satisfaction, organisational commitment, leadership behaviour and financial resources. (Boshoff, et al. 2002; Campbell & Campbell, 2003; Chan & Morrison, 2000; Elangovan, 2001; Lambert, et al. 2001; Popoola, 2005; Rasch & Harrell, 1989; Sourdif, 2004). Since these can be regarded as overarching conditions to job stress, they were not been included in the current study.

Job Satisfaction

Lambert, et al. (2001), refer to the many researchers who postulated job satisfaction to be a key antecedent of worker turnover. Referring to the work of Mobley et al., (1978 & 1979, as cited in Lambert, et al. 2001) they confirm that turnover intention has to be integrated in any employee turnover model. These researchers identify two categories of factors influencing job satisfaction, namely demographic characteristics and work environment factors. Under the latter they include role conflict, task variety, financial rewards, relationships with co-workers and autonomy / participation.

Following a multi-layered study, which entailed determining positive relationships or otherwise between the factors mentioned and job satisfaction, they confirmed that all work environment factors except autonomy have a significant impact on job satisfaction and that there is a causal relationship between job satisfaction and turnover intent.

In a study involving nurses at Tan Tock Seng Hospital in Singapore, which included demographic and environmental factors, Chan and Morrison (2000) explored intention to stay and intention to leave. They found that “liking the work” (job satisfaction) played a significant role in both intention to stay and intention to leave. However, in contrast to Lambert et al. (2001), they did not identify antecedents to job satisfaction.

Rasch and Harrell (1989), who conducted a study among management advisory services personnel, found that there was a direct causal relationship between a lack of job satisfaction and turnover intention and that job satisfaction was, in turn, influenced by work stress. They concluded further that Type A personalities are likely to experience less work stress and more job satisfaction and would therefore have lower turnover intention.

The research conducted by Popoola (2005), confirms the significant relationship between job satisfaction and turnover intention. By contrast, Elangovan (2001) states that stress and job satisfaction have no significant impact on turnover intention and that the most significant link was found to be between commitment and turnover intention. It could be argued that job satisfaction and the absence of stress are precursors to organisational commitment.

Organisational Commitment

Many of the studies linking commitment to intention to quit also include job satisfaction as a predictor of such intention.

The study conducted by Sourdif (2004) among nurses at McGill University Health Center stated as its intent to determine the importance of predictors such as satisfaction at work, satisfaction with administration, organisational commitment and work group cohesion for staff retention. It concluded only that the best predictors of intent to stay were satisfaction at work and satisfaction with administration.

Similarly Campbell and Campbell (2003) included organisational commitment in their study on job satisfaction. They examined the relationship between intention to quit and global measures of job satisfaction and organisational commitment. Working from the premise that global measures of intention to quit do not reveal differences between groups such as males and females or employees at different levels, they investigated the relative influence of different facets. Among these were job satisfaction and organisational commitment as well as role overload. They found that different facets influence different groups as regards their intention to quit. Their findings linked the eleven facet variables to specific gender and job level patterns, with intention to quit. Within the different groups, unique patterns emerged; in the managerial groups the males' strongest predictors for intention to quit were opportunities for advancement and work overload, whilst their female counterparts, most significant predictor were role overload. Regarding the non-managerial groups, the males' strongest predictors were work and organisational support and the females' predictors for intention to quit were pay, organisational support and organisational dependability.

Boshoff et al. (2002) identified role strain in the form of role ambiguity and role conflict as a component of organisational commitment. They concluded that the construct commitment and its components played an important role in the intention to stay and that role strain can therefore be accepted as a predictor of intention to quit.

In an unpublished doctoral study on organisational commitment amongst knowledge workers in South Africa, Bagraim (2005) viewed turnover intention from a professional and organisational perspective. This researcher further developed scales to measure the construct of turnover intention and organisational commitment from the stance of leaving the country.

Emigration is an important consideration in turnover intention. It has been identified in the research conducted by Morrell (2004) on the National Health Services nursing turnover in Britain as one of the key aspects of turnover in the nursing profession.

In view of the foregoing the various dimensions of turnover intention, namely organisational, professional, turnover cognition and emigration intention were included under the construct of turnover intention in this study.

It may be argued that organisational commitment is an overarching antecedent to intention to quit, but that job satisfaction is a significant predictor of organisational commitment and that stress in turn plays an important role in job satisfaction.

RESEARCH ON TURNOVER INTENTION AND ROLE STRESS IN THE HEALTH CARE SECTOR

The studies conducted by Chang and Hancock (2003), Chang, et al. (2005), Stordeur, D'hoore and Vandenberghe (2001), and Janssen, et al. (1999) looked particularly at stress among nursing staff.

Chan and Morrison (2000) conducted a descriptive study on demographic and work related factors which influenced the retention and turnover intention in Singapore hospitals.

They found that liking the work (job satisfaction) was cited as the major factor influencing the decision to stay, while unco-operative colleagues, staff levels and disliking the work were the most important reasons given for intention to leave. Sourdif's (2004) study among nurses also concluded that satisfaction was one of the predictors of intent to stay.

Chang and Hancock (2003) examined the socialisation process of new graduate nurses. They identified two factors in role stress, namely role ambiguity and role overload. They found that role ambiguity was a greater contributor to role stress, but that 10 months later role overload was the more important factor. Their study revealed that there were no significant differences in mean role ambiguity and role overload over time.

They further found that role overload and role ambiguity were negatively related to job satisfaction but that, with time, the importance of role overload in relation to job satisfaction diminished. Role ambiguity over the first 12 months of employment was associated with lack of clear, consistent information about the role and role conflict with conflicting role expectations. Overall, their study revealed only moderate levels of stress among the nurses surveyed.

Chang et al. (2005) relied on previous studies to identify the factors leading to role stress in nurses. Noting that role stress, and in particular work overload, was one of the main reasons for employee turnover, their research concentrated on strategies to reduce role stress. Among these were stress education, team building, flexible work hours and enhancing social and peer support.

In a study which evaluated the predictors of nurses' intent to stay at work in a university health centre, Stordeur et al., (2001) found that the majority (75.2%) of the nurses were planning to stay in their current jobs, 50.4% were definitely not leaving whereas 24.8% were uncertain.

The study also related leadership and organisational stress to emotional exhaustion among nursing staff. They found that work stressors accounted for 22% of the variance in emotional exhaustion; while leadership accounted for 9% of the variance. There was a significant positive relationship between active management-by-exception and increased emotional exhaustion, while transformational and contingency reward management was negatively related to exhaustion.

The study by Janssen et al. (1999) in a Dutch general hospital included aspects such as work content, working conditions, social and labour relations and conditions of employment. These were related to intrinsic work motivation, occupational burnout and intention to leave. These researchers concluded that elements that make work challenging and worthwhile had a significant influence on intrinsic job motivation, while burnout was related to a lack of social support from colleagues and by demanding aspects of work.

On the other hand, they found unmet career expectation in the form of higher salary and more responsibility were more clearly related to turnover intention than quality of job content.

CONCLUSION

A survey of the relevant literature revealed a plethora of studies into the intention to quit in an attempt to identify organisationally related causes of this phenomenon.

It emerged from the foregoing that there may be multiple interacting facets leading to the intention to leave, but that, indirectly, role stress as an influential factor in job satisfaction and commitment, is among the important determinants of intention to leave; in turn, that the dimensions of role stress in the form of role ambiguity, role conflict, role overload, resources inadequacy, skills inadequacy and constant change, were worthy of further investigation as to their relative importance.

The nursing profession has been shown to be a fertile field for such research owing to already established turnover figures and the relatively high levels of stress experienced by these employees, as reflected in the studies discussed in this chapter.

CHAPTER 2: METHOD

This chapter describes the research design, techniques, instrument selected and the applicable statistical procedures which were applied to answer the research question and to ensure, as far as possible, the validity and reliability of the research instrument and the findings emerging from its application.

RESEARCH DESIGN

Research Purpose

The primary purpose of the study was to analyse the relationship between turnover intention and role stress as operationalised in this study among registered professional nurses in the three public sector, academic hospitals in the Western Cape. It further examined the antecedent variables of role stress to establish a hierarchy of these variables as experienced by the sample population.

Research Approach

The research was quantitative in nature; the applicable research approach used in this study is descriptive. Babbie and Mouton (2001) states that the primary reason for using this approach was that, descriptive studies are undertaken to uncover data about the characteristics of subjects, groups and the frequency of a phenomenon's occurrence and the latter is the main focus of this study. The study made use of surveys as a cost effective and efficient manner in which to analyse the breadth of information regarding the registered professional nurses' perception of roles stress and future behavioural intent, to turnover intention.

This survey method was applied by previous researchers' in the same domain as identified in the literature review (Boshoff, et al., 2002; Chang, et al. 2005; Coetzer & Rothmann, 2002; De Bruin & Taylor, 2005; Fang & Baba, 1993; Kinman & Jones, 2005; Spector, et al. 2002; Tracy & Johnson, 1983; Vakola & Nikolaou, 2005).

SURVEY RESEARCH

Survey research is possibly the best method to use, when collecting original data for describing a population too large to observe directly (Babbie & Mouton, 2001). The survey design allowed the researcher to use multiple constructs within the same instrument, thereby making it possible to deduce significant positive or negative comparative inferences about the relationship between independent variables (role stress) and the dependent variable (turnover intention) in the study.

The present study used a simple cross-sectional survey design to elicit the response of a convenience sample of registered professional nurses. The advantages of this simple cross-sectional survey design is that it is an economical method to use when gathering data and, all things being equal, the response rates are usually high. It furthers allows for the study to be conducted over a relatively short period of time (Welman & Kruger, 2002).

NON-PROBABILITY SAMPLING

It was assumed that the composition of nursing staff does not differ to any significant extent from one hospital to another and that similar conditions prevail at public hospitals. For these reasons it was decided to conduct non-probability sampling. This design provided the researcher with the advantages of limiting the sample to three hospitals. Convenience sampling was used in that the hospitals selected provided a sufficiently large sample and were readily accessible, which would provide the researcher with the ability to extract meaningful recommendations from the study (Babbie & Mouton, 2001).

SAMPLE OF THE STUDY

The target population consisted of registered professional nurses as defined in terms of the section (30) (1) in the Nursing Act (33) of 2005 at three academic hospitals in the Western Cape. The Nursing Act (33) of 2005, Section (30)(1) defines a registered professional nurse as “a person who is qualified and competent to independently practise comprehensive nursing in the manner and to the level prescribed and who is capable of assuming responsibility and accountability for such practice.”

The criteria for the sampling frame were that the nurses should be regarded as professional and registered with the Nursing council. A further requirement was that the nurses should be permanent employees of the academic hospital.

In this study, academic hospitals were defined as those institutions that are involved in the training and teaching of staff, in line with the professional requirements of the Nursing Council.

Cognisance was taken of the literature that draws a distinction between the different nature of the settings within the diverse sections of a hospital (Beehr & Newman, 1978; De Bruin & Taylor, 2005; Chang & Hancock, 2003; Fang & Baba, 1993; Janssen, et al. 1999). Consequently, it was decided to exclude those registered professional nurses at the site of the study who worked in the emergency and trauma sections and applicable wards within the hospital, as the type of role stress that they experience is different to those of the nurses working in the normal ward environment (Fang & Baba; 1993).

The population sampled included the full range of occupational levels with a wide range in length of service. No distinctions were made as regards race and gender.

The characteristics of the sample were:

- All registered professional nurses
- All nurses who were currently employed, on a permanent basis at the hospital.
- Nurses from any race and gender.
- All occupational levels within the nursing profession.
- Wide-ranging length of service.

Demographic Profile

A total of 419 respondents participated in the study. All the participants were permanent professional registered nurses at the academic hospitals within the public sector in the Western Cape.

The majority of the respondents were female ($n = 394$, 94.7%) and only ($n = 22$, 5.3 %) were male. The age range of the sample was between 22 and 65 years. The mean age of the sample was 40.38 and the standard deviation 10.13. The period of tenure at the organisation ranged from 1 to 42 years. The mean tenure was 16.07 years at the same hospital, with a standard deviation of 9.75. Tenure mode was 20 years (8.8 %). It should be mentioned that the mode frequency closely approximated the frequency of one year tenure at the organisation (8.4 %). The number of years within the nursing profession / nursing experience of the group range from 1 to 45 years. The mean nursing experience was 20 years and the standard deviation 9.50. More than 53.2 % had 20 to 45 years nursing experience.

In Table 1 below the demographics relating to marital status, occupational level, language and hospitals are reflected. These demographic factors are analysed and discussed in both the results and discussion chapter as the controlling variables in turnover intention and role stress in this study.

Table 1***Detailed Demographics Data Describing Study Participants***

Variables	Responses	<i>n</i>	%
Marital status	Married	238	56.8
	Single	153	36.5
	Other	23	5.5
	Total	414	98.8
	No response	5	1.2
Occupational level	Chief professional nurse	265	63.2
	Senior professional nurse	47	11.2
	Professional nurse	80	19.1
	Registered nurse	19	4.5
	Other	6	1.4
	Total	417	99.5
	No response	2	.5
Language	English	117	29.8
	Afrikaans	228	54.4
	Xhosa	32	8.1
	Other	15	3.8
	Total	392	96.1
	No response	27	3.9
Operational Site	Hospital A	201	48
	Hospital B	69	16
	Hospital C	149	36

* (*n* = 419)

MEASUREMENT INSTRUMENT

The research questionnaire that was used in this study was one adapted by Bagraim (2005) from previous studies. The scales in the survey were designed to analyse the relationship between role stress, as operationalised in this study, and turnover intention. The short quantitative survey questions were collated from Bagraim (2005) and Bluedorn's (1982) Staying Leaving Index on turnover intention; Rizzo, et al. (1970) on role ambiguity and role conflict; Bagraim (2005) on role overload; Caplan, et al. (1975) on resource inadequacy and skills inadequacy, and Behrman (2006) on constant change.

A small section of the survey explored role stress and turnover intention in an unstructured open-ended response section. In this section the participants were encouraged to make any comments on their attitudes towards work as well as their work experience within their current organisation. The purpose of including this section in the questionnaire was to allow the respondent to express himself or herself freely and also to cater for respondents who like to answer in their own words. This section elicited unstructured comments regarding the respondent's attitude to work and the working experience. The researcher attempted to circumscribe the responses and to place these theoretically in the contextual framework of the study. A further advantage of this unstructured open-ended section was that it uncovered issues for further research within this setting (Welman & Kruger, 2002).

COMPOSITION OF THE INSTRUMENT

An extensive review of the literature on turnover intention, being the dependent variable, and role stress, being the independent variable, was conducted to develop the survey instrument used in the study (See Appendix A). The conceptual framework of the instrument and the various constructs contained therein are depicted below. Each construct is discussed in greater detail thereafter (See Figure 1).

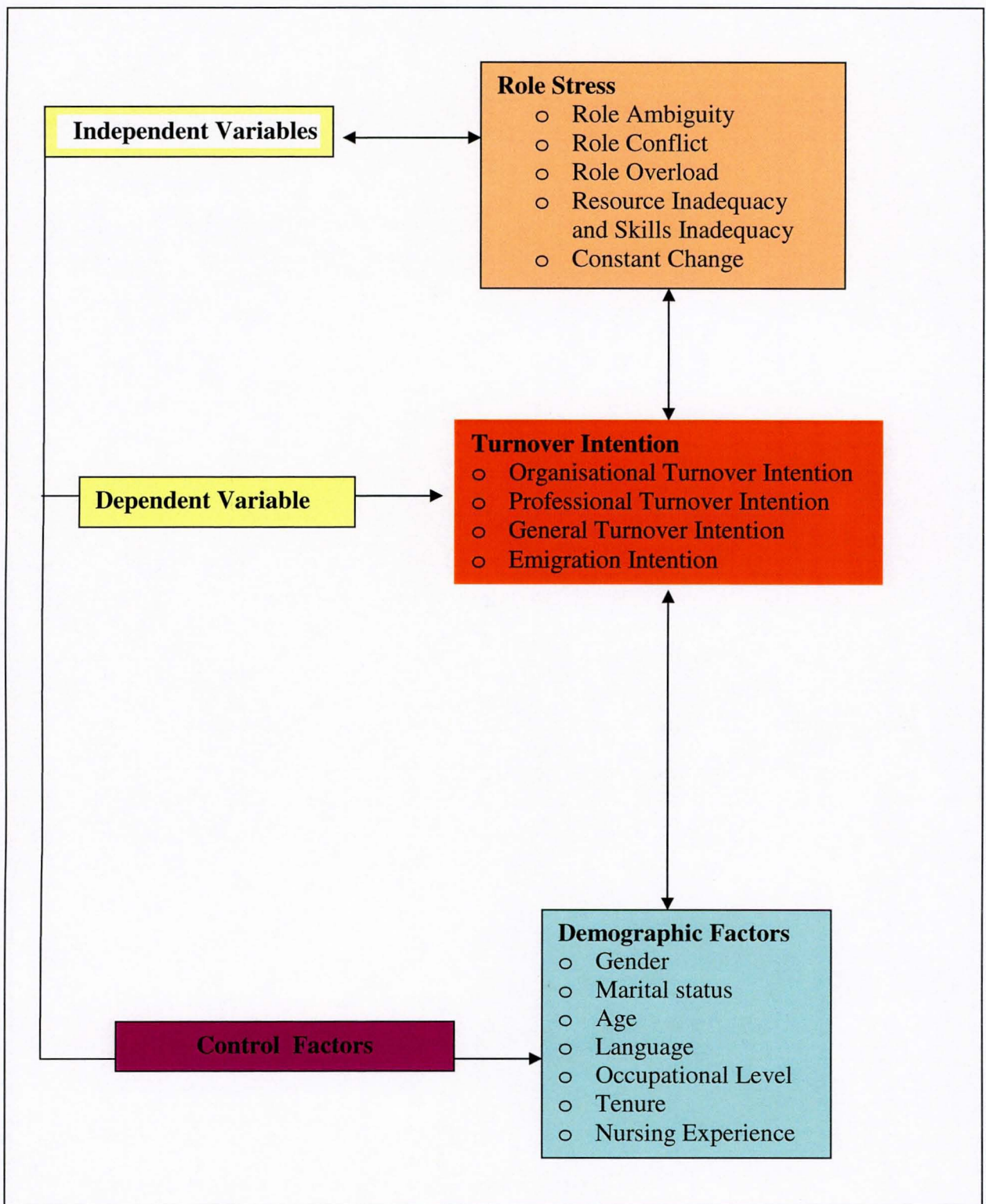


Figure 1: Conceptual Framework of the Instrument

Turnover Intention

The construct turnover intention used in this study was based on that developed by Bagraim (2005) and Bluedorn's (1982) Stay Leaving Index (SLI) but was adapted to incorporate the dimensional aspects of turnover intention, as well as Bagraim's (2005) emigration intention in order to enhance the content validity of the instrument. The Cronbach coefficient alpha for these scales was 0.86 and 0.93 respectively. Organisational turnover intention reflects intention to leave a particular hospital, while professional turnover intention relates to the individual's decision to leave the nursing profession. Emigration turnover intention is indicative of the intention either to leave the country and stay in the nursing profession or to leave the country and find a different job within another country.

A total of 10 items relating to turnover intention were included in the instrument. These assessed the individual's behavioural aim to turnover intention, the focal areas being on turnover intention related to the organisation, the nursing profession, turnover cognition and emigration intention. The statements were distributed in clusters of three to four items in four different sections in the questionnaire. Statements adapted from Bagraim (2005) included, "I would like to leave this hospital", "I plan to leave the nursing profession as soon as possible". The adaptation from Bluedorn's (1982) SLI included statements such as "How would you rate your chances of "Quitting in the next three months". The intention to leave the nursing profession and the country, included statements such as, "I plan to leave the nursing profession as soon as possible" and "Within the next year, I hope, to have left South Africa". The latter was adapted from Bagraim (2005).

Role Ambiguity

In operationalising the construct role ambiguity cognisance was taken of the multidimensional aspects of role ambiguity. However, as indicated earlier in the literature, a fair amount of the studies conducted using role ambiguity as a construct, and in particular those conducted in hospitals, made use of Rizzo et al's (1970) items.

Consequently this study confined itself to Rizzo et al.'s (1970) items, with minor adjustments. The Cronbach coefficient alpha for these scales was 0.78. The 5-items in this section included statements such as, "I do not know what my responsibilities are" and "Explanation is not clear of what has to be done".

These items were negatively loaded because the mere fact that they were in the negative provided the respondent with the assurance that a negative response was acceptable. Within the culture of prevalent organisational cultures which tend to punish negative opinions, such assurance would be necessary (Robbins & Jugde, 2007).

Role Conflict

As indicated in the literature review, there appears to be an overlap between role conflict and role overload, but Rizzo et al. (1970, p. 156) state that role conflict can be distinguished by the incongruency of demands made on the individual, whether this be between roles, within roles or within the same role set. The Cronbach coefficient alpha for these scales was 0.81. The 5-items adapted for these constructs included statements such as, "I work under conflicting policies or guidelines" and "I have a very heavy workload, perhaps too heavy".

Role Overload

It was evident from the literature that the terms role overload or work overload are used interchangeably. The items used were adapted from Bagraim (2005), who measured the construct work overload from the perspective of time and responsibility. The Cronbach coefficient alpha for these scales was 0.90. The 5-items included statements such as "I do not have enough time to complete my work" and "I have too much responsibility in my job."

Resource Inadequacy and Skills Inadequacy

The nine items to assess these constructs were adapted from Caplan, et al. (1975) and Bagraim (2005). The focus of resource inadequacy was on supplies, technological resources, and administrative support. The Cronbach coefficient alpha for these scales was 0.91.

Skills inadequacy in this study was measured from the perspective of training and development as linked to the ability to cope adequately in a job. Statements included, "I do not have enough of the supplies that I need to do my job" and "I do not feel adequately trained in certain aspects of my job". Four of the items were negatively loaded for the same reasons as those stated previously.

Constant Change

The construct constant change was operationalised in terms of Behrman's (2006) items which measured constant change from the perspective of changes in tasks, responsibilities, reporting structure and constantly having to learn new skills to accommodate the changes.

The Cronbach coefficient alpha for these scales was 0.89. Statements included items such as "The tasks in my work seem to change too often" and "I often have to adjust to changes at work".

DEMOGRAPHIC FACTORS

The variables measured in this section of the instrument included the following; age, marital status, occupational level, years of experience in the profession, tenure, home language and gender.

MEASUREMENT SCALE

The measurement scale for the constructs turnover intention and role stress used a 5-point Likert scale that ranged from 1 being Strongly Disagree to 5 being Strongly Agree. This was used throughout in order to ensure consistency. Cognisance was taken of central tendency; therefore the layout of the questionnaire used variance in the print settings such as bold and light greys, as well as the negative loading of some of the items.

The only label scale that differed in the instrument was that used from Bluedorn's 1982, Staying Leaving Index. The scale ranged from 5 being Very Good to 1 being Bad.

RESEARCH PROCEDURE

Obtaining Permission

In order to conduct the study it was necessary firstly to receive permission from the University and, secondly, from management at the three academic hospitals in the Western Cape. In the former case a research proposal was submitted to the staff in the relevant university department. Once they had approved of the proposal it was forwarded to the Research Ethics Committee for final approval (See Appendix B).

In June 2007 a letter of request was forwarded to the Nursing Director at each hospital thereafter the Hospital Management Board informed that they required the following documents:

- A detailed outline of the proposed study (research proposal)
- A copy of the approval letter for the study from the University's Research and Ethics Committee
- An outline of the timing and resource considerations required for the study
- The protocol of the proposed study

This information was supplied via e-mail within a period of two days. A period of four weeks passed before a response from the Assistant Nursing Director was received. A meeting for further clarification on the study was requested. It was also communicated that the hospital staff, specifically the nurses, were at the time engaged in strike action related to a wage dispute (Nursing Director, personal communication, June 27, 2007).

At the meeting with the Assistant Director of Nursing, approval was granted to conduct the study (See Appendix 3) with the proviso that a ten minute Power Point presentation be given to the Senior Nursing Management Committee (SNMC) by the researcher at their weekly management meetings. The objective of this meeting was to address any problems or clarification of the study as raised or requested by the various Assistant Unit Managers as well as to review the protocol of the research.

The PowerPoint presentation of the actual study was made to the SNMC at various time intervals during the months of June, July and August, 2007. The personnel at these meetings included the managers from the various units and departments within the hospital as well as the Assistant Director and Director of Nursing. It was decided by the Assistant Director that the nursing managers of the various units or departments would be responsible for the actual distribution of the questionnaires.

The main reason for distribution of the questionnaires by hospital senior staff members were related to the hospital's security policies. It was further stated that these members of staff would be able to distinguish the registered nurses employed full time at the hospital from the other hospital personnel.

A pre-emptive condition to conducting the study at the various academic hospitals in the Western Cape was that the Nursing Director of each hospital required the researcher to provide them with the raw data, the findings and recommendations, both individually and collectively. The management also requested that the hospital name should not appear in the thesis or in any future articles emanating from the study.

Distribution of Questionnaires

After obtaining permission to conduct the study, the questionnaire was given to the Assistant Directors who had instructed the secretary to distribute the questionnaires to the various unit managers. The researcher provided a five-day working period for collection of the completed questionnaires from the secretary.

A total of 950 questionnaires were distributed to the three hospitals following the protocol as outlined above. The number of questionnaires distributed was based on the total number of permanent registered professional nurses at the hospitals. These figures were supplied by the various Nursing Directors.

At hospital A, a total of 500 questionnaires were distributed and 201 were returned; a response rate of 46.2 %. At Hospital B a total of 200 questionnaires were distributed and 69 were returned, which is a response rate of 34.5%. The reasons for the low response rate was that the hospitals had just prior to this research conducted two surveys on the same sample, one for the hospital on job satisfaction and the other by an outside consultant on customer satisfaction. The Nursing Director indicated that both these surveys had yielded a response rate of less than 15%, even though both surveys had personal incentives for the individuals. At Hospital C a total of 250 questionnaires were distributed and 149 were returned, giving a response rate of 59.6 %.

The overall response rate of the survey was 44.1 % which, according to Babbie and Mouton (2001), is large enough to be representative of the population. Therefore generalisations could be extrapolated for the population of registered professional nurses at academic hospitals in the Western Cape, excluding those in the trauma and emergency sections.

It was necessary to have a follow-up meeting with the Assistant Director of Nursing at one of the hospitals because of the negative impact that the nationwide public servant strike action, during the period of July 2007, had had on the response rate of the survey (Nursing Update, August 2007). Consequently a second batch of questionnaires was distributed to the unit managers, to include those registered professional nurse who had been unavailable for the first distribution.

DATA COLLECTION

The researcher provided the Nursing Director's secretary with clearly marked sealed boxes for the completed questionnaires. These boxes were then given to the various unit managers who returned the boxes to the secretary after the five-day period.

The researcher then received an e-mail from the secretaries at the various hospitals, upon which the boxes with the completed questionnaires were collected by the researcher. This occurred between end July and mid August 2007.

Data Cleaning

The quantitative data was edited by using Microsoft Excel as a design template to organise the 52 variables falling under the following categories; turnover intention, with sub-categories for organisational turnover intention, professional turnover intention, turnover cognition and emigration turnover intention. The construct role stress was sub-divided in the categories operationalised in this study, which were: resource inadequacy, skills inadequacy, role ambiguity, role conflict, role overload and constant change. The demographic factors were collated in the following categories: gender, marital status, age, future prospects, language, occupational level, work status, hours of work, tenure and years in the nursing profession.

A quality check was conducted to ensure that the raw data had been entered correctly. The researcher randomly chose a sample of 41 questionnaires which represents 10 % of the actual data, and rechecked that the information entered was correct. Only two visible mistakes were found. These were corrected.

A decision was taken not to include the turnover cognition construct in the analysis as there were 201 responses missing on this item.

This information was then imported to the SPSS students' version 15 statistical package, where the various statistical procedures were executed in line with the research question underpinning this study.

The qualitative data was organised using Microsoft Excel. These open-ended unstructured responses were edited using Microsoft Word 2000. The raw data was analysed and various themes in the answering of this section were identified.

STATISTICAL ANALYSIS

In this stage the raw data obtained from the testing was analysed in terms of the quantitative and qualitative status.

The data collected was analysed by the application of descriptive and inferential statistics. The aim of descriptive statistics is to present the multiplicity of the collected data in a coherent and functional manner. The primary advantage of presenting the data in a coherent and functional manner is that the main characteristics of the research question can be easily grasped (Welman & Kruger, 2002).

Descriptive statistics are the foundation for inferential statistics. This form of analysis provides the means by which one is able to draw inferences about population properties on the basis of what is known about the sample.

The analysis of the data used a variety of descriptive statistical techniques aimed at analysing the relationship between the independent variables and the dependent variable as conceptualised in terms of its identified antecedents.

The students' statistical software package; SPSS version 15 was used for the following calculations:

Calculations of means and standard deviations was undertaken to analyse the average and to indicate spread of sample distribution values from the mean.

The chi-squared test of association was applied to test the strength of the relationship between the independent variables and the dependent variable. T-tests and ANOVA were applied to ascertain if there were differences between groups.

Regression analysis was applied to analyse the relative influences of each independent variable of role stress on turnover intention, the dependent variable.

Cronbach Alpha was used to confirm the reliability of the scales and exploratory factor analysis, was undertaken to determine the patterns amongst the variations of the independent and dependent variables. (Tredoux & Durrheim, 2002).

Since the research instrument was drawn from a substantial body of previous research, face validity could be established with relative ease. It was left to the researcher to establish that the research process and the collection and the analysis of data conformed to the required prerogatives.

In the next chapter, the results of the study will be presented, while the limitations of the research will be discussed in the last chapter.

CHAPTER 3: RESULTS

The principal objective of this study was to analyse the relationship between turnover intention and role stress, and to further determine the relative strength and direction of the dimensions of role stress on turnover intention. The researcher also analysed the data in terms of demographic difference such as language, marital status, occupational levels, age and location.

SCALE DIMENSIONALITY

A principal axis factor analysis was conducted to evaluate the construct validity of the scales. The results confirmed that the factor loadings were strong on the items that were hypothesised to measure the same dimensions, confirming that the items each had a unique value. Therefore no items were discarded from the analysis.

RELIABILITY ANALYSIS

Cronbach's Alpha values were calculated for the three dimensions of the dependent variable and the six independent variables in order to establish the internal consistency within scales (See Table 2). According to Bless and Kathuria (1993), such consistency is a strong indicator of test-retest reliability.

The Cronbach Alpha values reflected in Table 1 below confirm the reliability of the scales used in this study. The highest values calculated were 0.92 for emigration turnover intention (ETI) (dependent variable) and 0.90 for resources inadequacy (RI) (independent variable).

Table 2***The Reliability of Scales in Current Study***

Scale Name	Valid N	No of items	Cronbach Alpha Coefficient
Organisational Turnover Intention (OTI)	419	3	0.91
Professional Turnover Intention (PTI)	419	3	0.91
Emigration Turnover Intention (ETI)	418	3	0.92
Resources Inadequacy (RI)	417	5	0.90
Skills Inadequacy (SI)	419	4	0.78
Role Ambiguity (RA)	418	5	0.89
Role Conflict (RC)	418	5	0.85
Role Overload (RO)	418	5	0.87
Constant Change (CC)	419	5	0.85

DESCRIPTIVE STATISTICS

An initial analysis of the data was conducted using descriptive statistics. These are reflected in Table 3 below.

Table 3***Response Patterns to the Three Dimensions for Turnover Intention and Six Role Stress Scales***

Scale	Valid N	Mean	Median	Mode	Variance	Std. Dev.
OTI Sum Scale	419	2.74	3.00	2.00	1.29	1.14
PTI Sum Scale	419	2.24	2.00	2.00	1.10	1.05
ETI Sum Scale	418	2.18	2.00	2.00	1.25	1.12
RI Sum Scale	417	3.23	3.20	4.00	1.25	1.12
SI Sum Scale	419	3.09	3.00	4.00	1.21	1.10
RA Sum Scale	419	2.44	2.00	2.00	1.06	1.02
RC Sum Scale	418	3.14	3.20	2.00	1.24	1.11
RO Sum Scale	418	3.44	3.60	4.00	1.21	1.10

Note. OTI = Organisational Turnover Intention, PTI = Professional Turnover Intention, ETI = Emigration Turnover Intention, RI = Resources Inadequacy, SI = Skills Inadequacy, RA = Role Ambiguity, RC = Role Conflict, RO = Role Overload, CC = Constant Change

A 5-point Likert Scale, with 1 = Strongly Disagree, 2 = Agree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree, was used to measure all the constructs.

Table 3 reflects a strong central tendency in the responses selected to all three dimensions of the dependent variable (Turnover Intention). Mean scores ranged between 2.18 and 2.74 while the mode in all three dimensions was 2. Only in the median is there a noticeable difference between that for organisation turnover intention (3.00) and those for professional turnover intention (2.00) and emigration turnover intention (2.00).

The mean score for four of the independent variables, namely resource inadequacy, skills inadequacy, role overload and role ambiguity were higher than 3.00 (neutral response). This finding was also reflected in the median and the mode for resource inadequacy, skills inadequacy and role overload, but not in the mode for role conflict which showed the most frequent response in this category to be 2.00 (Disagree). The mode for the other three variables mentioned was 4.00 (Agree).

Frequencies of Career Change Opportunities

In order to establish where nurses would go to if they were to leave the organisation the question "If you were to leave your current employer, where are you most likely to go" which measured the potential career changes of the sample, was included under the demographic section.

Table 4 below reflects the responses to the question. $n = 409$, of which 229 / 409 (56 %) responded that they would stay in South Africa and work in nursing and 75 / 409 (18.3 %), revealed that they would stay in nursing, but go overseas; thus a total of 74.3 % intended staying in the nursing profession. Only 17.9 % ($n = 73$) were contemplating changing careers. The remaining 32 respondents (7.8 %) were either waiting for retirement or contemplating staying at home.

Table 4***Frequency of Responses to Potential Career Change***

Responses	Frequency	%
Stay in South Africa and work in nursing	229	56.0
Stay in South Africa and change careers	71	17.4
Go overseas and work in nursing	75	18.3
Go overseas and work in another career	2	.5
Other, specify	32	7.8
Total		100

* $n = 409$.

Correlations between Demographic Variables and the Dependent Variables

An analysis of variance (ANOVA) was conducted in order to establish whether demographic factors had any influence on the three outcome variables. Before the ANOVA could be conducted, it was necessary to establish that the data met with the prerequisites of homogeneity and normality. This was confirmed.

ANOVA could be applied only to the categorical demographic factors, namely language, marital status, occupational levels and location (different hospitals). The purpose was to establish whether there was a variance in the responses between and within these groupings. The results showed that there was no significant difference in responses of the identified demographic categories. The p-values were all above ($p. > 0.2$).

A correlation analysis of the continuous demographic variable, age, and the other independent variables was conducted to establish whether this control variable would have an effect on the results. The results of this analysis did not reveal any significant impact by age on the dependent variable.

Correlation between Independent and Dependent Variables

The Pearson Correlation was applied to establish if significant positive or negative correlations existed between the continuous independent variables. The results are reflected in Table 5. The correlations were all significant at the 0.05 level, but some appeared to be weak. For example, the correlation between role overload and skills inadequacy and all three dimensions of turnover intention was generally weaker than those between the other continuous variables. Therefore the 0.01 level of significance was applied. The strongest correlation, 0.306, was between role conflict and organisational turnover intention. Other correlations with organisational turnover intention which are significant were those for resources inadequacy (.246), constant change (.232) and role ambiguity (.227).

Correlations between the variables representing the dimensions of role stress and professional turnover and emigration turnover were generally lower than those relating to organisational turnover, but significant correlations were recorded between professional turnover intention, role ambiguity, constant change and role conflict and between professional turnover intention and emigration turnover intention.

Table 5*Correlations between Dependent and Independent Variables*

	OTI	PTI	EMI	RI	SI	RA	RC	RO	CC
OTI									
Pearson Correlation	1	.416(**)	.348(**)	.246(**)	.117(*)	.227(**)	.305(**)	.107(*)	.232(**)
Sig. (2-tailed)		.000	.000	.000	.016	.000	.000	.028	.000
N	419	419	418	417	419	419	418	418	419
PTI									
Pearson Correlation	.416(**)	1	.269(**)	.116(**)	.055	.159(**)	.145(**)	-.019	.154(**)
Sig. (2-tailed)	.000		.000	.016	.257	.001	.003	.699	.002
N	419	419	418	417	419	419	418	418	419
EMI									
Pearson Correlation	.348(**)	.269(**)	1	.118(*)	.075	.183(**)	.210(**)	.070	.211(**)
Sig. (2-tailed)	.000	.000		.016	.127	.000	.000	.152	.000
N	418	418	418	416	418	418	416	416	418

Note. OTI = Organisational Turnover Intention, PTI = Professional Turnover Intention, EMI = Emigration Turnover Intention, RI = Resources Inadequacy, SI = Skills Inadequacy, RA = Role Ambiguity, RC = Role Conflict, RO = Role Overload, CC = Constant Change

**** Correlation is significant at the 0.01**

*** Correlation is significant at the 0.05**

Correlations among the Independent Variables

Table 6 reflects the correlations among the different dimensions of role stress as operationalised in this study. All correlations were significant at the 0.01 level. The lowest was 0.307 between role overload and skills inadequacy and the highest was 0.617 between role conflict and constant change. This suggests that, even though the dimensions are discriminant, they all resort under the same broad conceptual framework.

The correlations were further necessary to detect any warning signs of collinearity among the dimensions, a prerequisite for a robust stepwise regression analysis. The lower correlations between variables will lessen the possible effect of collinearity.

Table 6***Correlations among the Independent Variables***

	RI	SI	RA	RC	RO	CC
RI Pearson Correlation	1					
Sig. (2-tailed)						
N	417					
SI Pearson Correlation	.409(**)	1				
Sig. (2-tailed)	.000	.000				
N	417	419				
RA Pearson Correlation	.353(**)	.367(**)	1			
Sig. (2-tailed)	.000	.000				
N	417	419	419			
RC Pearson Correlation	.521(**)	.399(**)	.554(**)	1		
Sig. (2-tailed)	.000	.000	.016			
N	416	418	418	418		
RO Pearson Correlation	.429(**)	.307(**)	.319(**)	.575(**)	1	
Sig. (2-tailed)	.000	.000	.000	.000		
N	418	418	418	416	418	
CC Pearson Correlation	.393(**)	.411(**)	.408(**)	.617(**)	.492(**)	1
Sig. (2-tailed)	.000	.000	.000	.000	.000	
N	417	419	419	418	418	419

Note. RI = Resources Inadequacy, SI = Skills Inadequacy, RA = Role Ambiguity, RC = Role Conflict, RO = Role Overload, CC = Constant Change

**** Correlation is significant at the 0.01**

MULTIPLE REGRESSIONS ANALYSIS

The correlations discussed above do reflect significant relationships between the continuous variables. Correlations, which measures bivariate relationships, could be statistically significant but weak at a practical level. In order to build a robust model which would enable one to more definitively gauge the relative effect of independent variables, it was necessary to conduct a multiple regression analysis, using the step-wise regression model (Tredoux & Durrheim; 2002).

Multiple regression analysis allows the researcher to estimate relationships after "controlling" or "adjusting" for other factors. This would allow one to remove the effect of any confounding variables and thereby uncover the true effect, which was the focus of the research.

Tables 7 and Table 8, below reflect the results of the Multiple Regression Analysis.

Table 7

Multiple Regression Analysis of Organisational Turnover Intention

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1*	.302(a)	.091	.089	.92725980	
2*	.332(b)	.110	.105	.91874221	
3*	.354(c)	.126	.118	.91201514	
4*	.369(d)	.136	.127	.90778041	
5*	.381(e)	.145	.133	.90425272	
Change Statistics					
Model	R Square Change	F Change	Df1	df2	Sig. F Change
1*	.091	37.623	1	375	.000
2*	.019	7.985	1	374	.005
3*	.015	6.538	1	373	.011
4*	.010	4.488	1	372	.035
5*	.009	3.908	1	371	.049

* a. Predictors: (Constant) Role Conflict

* b. Predictors: (Constant) Role Conflict, Age

* c. Predictors: (Constant) Role Conflict, Age, Resource Inadequacy

* d. Predictors: (Constant) Role Conflict, Age, Resource Inadequacy, Role Overload

* e. Predictors: (Constant) Role Conflict, Age, Resource Inadequacy, Role Overload, Role Ambiguity

The step-wise analysis selected the following continuous variables for model building: role conflict, age, resource inadequacy, role overload and role ambiguity. These proved, in combination, to be the best predictors of organisational turnover. The step-wise analysis revealed a moderate relationship between organisational turnover intention and the above variable as seen in Table 7.

In the regression analysis, model 1, which used role conflict, revealed, role conflict to be the strongest predictor of organisational turnover ($r = .302$), with a std. error of (.92725980) and the related p-value of ($p = 0.00$). 8.9 % of the variation in organisational turnover intention is explained by role conflict (R^2 adjusted = .089).

Model 2 in the regression analysis used role conflict and age, with ($r = .332$), with std. error of (.91874221) and the related p-value of ($p = 0.05$). 10.5 % of the variation in organisational turnover is explained by role conflict and age (R^2 adjusted = .105). Model 5, in the regression analysis accounted for the largest variation in organisational turnover intention (13.3 %) where the predictors role conflict, age, resources inadequacy, role overload and role ambiguity revealed the following values; ($r = .381$) with a std. error of (.90425272) and the related p-value of ($p = 0.50$), with (R^2 adjusted = .133).

Whereas the correlation did not indicate that age accounted for variance in responses, the multiple regression analysis (Model 5) did reveal that age has a significant effect as a control variable for the predictors of organisational turnover intention. Although the beta value was small ($B = -.013$), with the p-values of ($p = 0.05$) it was still significant.

The multiple regression analysis (See Table 8) also revealed a negative relationship between certain predictors of role stress and organisational turnover intention. For age and role overload, the beta values were ($B = -.013$ and $B = -.140$) respectively with the p-value ($p = 0.50$). The negative relationship indicates that lower age and lower role overload is associated with higher turnover intention, while higher role stress is associated with higher turnover intention. Thus, as role stress increases, the predictors age and role overload decrease in relation to organisational turnover intention.

The F test showed that this is a significant model ($p = .000$).

Table 8***Coefficients of Organisational Turnover Intention***

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.025	.048		-.532	.595
Role Conflict	.318	.052	.302	6.134	.000
2 (Constant)	.581	.220		2.644	.009
Role Conflict	.324	.051	.307	6.298	.000
Age	-.015	.005	-.138	-2.826	.005
3 (Constant)	.567	.218		2.599	.010
Role Conflict	.245	.060	.233	4.110	.000
Age	-.015	.005	-.135	-2.784	.006
Resources Inadequacy	.145	.057	.145	2.557	.011
4 (Constant)	.519	.218		2.375	.018
Role Conflict	.307	.066	.292	4.640	.000
Age	-.013	.005	-.124	-2.550	.011
Resources Inadequacy	.171	.058	.170	2.959	.003
Role Overload	-.135	.064	-.128	-2.119	.035
5 (Constant)	.502	.218		2.307	.022
Role Conflict	.245	.073	.233	3.367	.001
Age	-.013	.005	-.120	-2.478	.014
Resources Inadequacy	.161	.058	.161	2.798	.005
Role Overload	-.140	.063	-.133	-2.211	.028
Role Ambiguity	.118	.060	.116	1.977	.049

According to Tredoux and Durrheim (2002), it is not desirable to have substantial intercorrelations between independent variables when conducting a multiple regression analysis. In order to ensure that this was not the case in the present study a collinearity diagnosis was conducted involving both the selected and the discarded independent variables. Table 9 reflects the results in respect of the five selected predictors. A tolerance level of less than 0.1 would raise concerns regarding collinearity as would a *VIF* value which is greater than 10. The levels and values reflected in Table 8, indicated that collinearity was not a problem.

Table 9***Multiple Regression Collinearity Statistics***

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant) Role Conflict	1.000	1.000
2 (Constant) Role Conflict Age	.998 .998	1.002 1.002
3 (Constant) Role Conflict Age Resources Inadequacy	.732 .998 .733	1.367 1.002 1.365
4 (Constant) Role Conflict Age Resources Inadequacy Role Overload	.588 .986 .700 .639	1.700 1.014 1.429 1.565
5 (Constant) Role Conflict Age Resources Inadequacy Role Overload Role Ambiguity	.481 .984 .695 .638 .668	2.080 1.016 1.438 1.568 1.498

RESPONSES TO OPEN-ENDED QUESTION

The open-ended question was completed by 92 respondents across the three location sites. In order to analyse the responses the researcher made use of the thematic analysis approach whereby the main themes in the comments were identified. Eleven major themes emerged from this section with inadequate compensation and staff shortages being the dominant themes. The comments that reflected a duplication of the facets measured in the scales, such as role overload, resource inadequacy and role conflict, were not analysed.

The analysis revealed the following themes: inadequate compensation, staff shortages, job enlargement, performance appraisal system, poor communication structures, poor career prospects, low staff morale, lack of management skills and personal and professional security.

A small portion (18 %) of the respondents commented on the love of the job as well as their strong commitment to their organisations.

Table 10 below depicts the breakdown of comments and percentages.

Table 10

Thematic Analysis of the Open-Ended Question

Themes	Number of comments made	% of responses	Rank
Inadequate Compensation	54	58.6	1
Staff Shortages	52	56.5	2
Poor Career Prospects	44	47.8	3
Low Staff Morale	42	45.6	4
Poor Communication Structures	42	45.6	4
Expanding Job Description	35	38.0	5
Lack of Management Skills	33	35.8	6
SPMS (Performance Appraisal)	29	31.5	7
Responsibility without authority	27	29.3	8
Job Satisfaction	17	18.4	9
Personal and Professional Security	12	13.0	10

*** Factors do not add up to 100 % as individuals can identify multiple factors**

n = 92.

The progressive analysis of the statistical data as well as the thematic analysis revealed interesting correlations as well as certain anomalies which will be discussed in the following chapter.

CHAPTER 4: DISCUSSIONS AND RECOMMENDATIONS

The researcher set out firstly to investigate the nature of the correlation between role stress and turnover intention as established by previous research ((Bluedorn, 1982; Boshoff, et al. 2002; Chang, et al., 2005; Coetzer, & Rothmann, 2006; De Bruin & Taylor, 2005; Fang, & Baba, 1993; Jacobs & Roodt, 2007; Kinman, & Jones, 2005; Rizzo, et al. 1970; Spector, et al. 2002; Tracy & Johnson, 1983; Vakola & Nikolaou, 2005) and, secondly, to measure the relative effect of the identified dimensions of role stress on turnover intention.

The results did reveal statistically significant correlations between role stress, as operationalised by the six identified dimensions, and turnover intention. This confirmed studies by Elloy and Smith (2003), Pandey and Kumar (2002), Rizzo, et al. (1970), Siegall (2000) and Lait and Wallace (2002) all of whom reported a strong causal relationship between role stress and turnover intention. In this study, despite the correlation referred to, turnover intention among professional registered nurses at three academic hospitals proved to be practically weak. This suggests that other factors influenced the decision to remain within the organisation, the profession and the country. As Campbell and Campbell (2003) state, a more definitive reflection of intention to stay or leave may be obtained by investigating a multiplicity of factors.

All six operationalised dimensions of role stress, being role conflict, role overload, resource inadequacy, skills inadequacy, role ambiguity, and constant change, proved to be significant predictors of turnover intention. These dimensions also correlated strongly with each other while no indication of collinearity was found. This proved the dimensions to be independent facets of the construct role stress. The multiple regression analysis showed that role conflict, age, role overload, resource inadequacy and role ambiguity in combination were the strongest predictors of organisational turnover intention.

Turnover Intention

Three dimensions of turnover intention were measured, namely organisational turnover, professional turnover and emigration turnover. It is obvious that professional turnover intention and emigration turnover intention would also be encapsulated in organisational turnover intention; therefore the latter was primarily used for model building. This conforms to the purpose of the investigation, namely to establish whether role stress would cause nurses in the hospitals surveyed to leave those organisations.

An analysis of the mean, median and mode for organisational turnover intention (OTI), professional turnover intention (PTI) and emigration turnover intention (EMI) revealed that there is very little difference in responses to the three dimensions of turnover intention. In fact, each has a mode of 2 indicating that the most frequent response in all three dimensions was Disagree. As mentioned in the previous chapters the median of 3 for OTI was slightly higher than for other two dimensions (2), but this should be read in relation to the mode which was the same.

The above results should be read in conjunction with responses to the Question D4 in the questionnaire "If you were to leave your current employer where are you most likely to go." Of the 409 responses 55.9% indicated that they would stay in South Africa and work in nursing, 18.3% that they would go overseas and work in nursing, 17.3% that they would stay in South Africa and change careers and only 0.48% that they would go overseas and change careers.

The conclusion to be drawn from the above is that, although slightly more of the respondents might consider leaving the organisation, the majority of the respondents (74.3%) do not intend leaving the nursing profession.

This contrasts with the findings of Gardulf, et al. (2005) who investigated the reasons for nurses wanting to quit at a university hospital. The findings of the study indicated that more than half of the nurses, $n = 449 / 823$ (55%) stated that they wanted to quit their present job.

The main reasons cited were dissatisfaction with the salary, psychologically strenuous and stressful work, looking for new opportunities and limited opportunities for career growth. On the other hand, the findings are in line with those of Chan and Morrison (2000), who investigated the factors influencing the retention and turnover intention of registered nurses in a Singapore hospital. The findings of the study revealed that 67% of the registered nurses were not leaving the organisation, although this group did cite poor staffing, heavy workload and poor communication structures with management and support staff as problematic.

The predominantly negative responses recorded in this study as regards intention to leave the organisation and the nursing profession may be explained from various perspectives ranging from unique South African conditions to the demographic and occupational composition of the sample

Organisational Turnover Intention

The organisations surveyed were all state hospitals. Although compensation levels may not match those in the private sectors, anecdotal evidence suggests that benefits for the public sector in the form of housing allowances, medical aid, pensions, vacation and sick leave are generally more beneficial than for the private sector. Management science teaches that organisations which provide extensive benefits are more likely to retain staff (Robbins & Judge, 2007). An additional aspect to be taken into account is the fact that, at the time when the study was conducted, a nationwide strike by public servants, which included nursing staff, had just ended. Indications from government were that they were considering a special, improved compensation structure in line with international benchmarks for the nursing profession (Nursing Update, July, 2007).

This may have influenced respondents to adopt a more positive attitude towards their organisations, particularly since inadequate compensation was the most frequently mentioned theme emerging from the open-ended responses (see discussion elsewhere in this chapter).

The demographic analysis revealed that respondents' ages ranged from 22 to 65 with a mean age of 40 and a median of 38. Years of experience ranged from 1 to 42, with a mean of 20. 56.8% of respondents were married and the majority were chief professional nurses (63.2%). Although the statistical analysis (ANOVA) revealed no significant differences between demographic factors in relation to intention to quit, the regression analysis showed that age had a small but significant influence on the dependent variables professional and emigration turnover intention. It could be argued that the demographic composition of the sample did influence the results. Universally, persons in the higher age groups (40 to 65) are less likely to consider alternative employment (Robbins & Judge; 2007).

In their study conducted among nurses at a Singapore hospital, Chan and Morrison (2000, p. 117) found that nurses with longer experience were more likely to stay in the organisation. They surmise that the reason for this could be that these nurses had "invested more of themselves in the organisation and this made leaving impractical." These researchers further note that nurses with longer tenure would also be more competent and skilled. This, they believe, would make it easier for them to cope with a stressful working environment.

The results of the present study revealed that the average tenure of the respondents sampled was relatively high. Of the 408 respondents 42.8 % had worked in the same organisation for between 20 and 45 years. Moreover, 63.2 % of respondents were chief professional nurses. Chan and Morrison's (2000) findings could thus explain the predominantly negative responses in the organisational turnover dimension, despite the relatively high levels of role stress recorded in this study.

Since the primary aim of the study was to analyse the relative effect of the dimensions of role stress on turnover intention, responses relating to intention to stay and the reasons therefore were not elicited. This means that cognisance was not taken of organisational and demographic aspects such as those mentioned above which could, despite recorded levels of role stress, induce respondents to stay with the organisation.

In every organisation there are "push-pull" factors, both of which influence the employees' attitude towards the organisation and the decision to either stay or leave. Among the pull factors are those such as job security, career pathing, higher organisational morale, teamwork, effective management / leadership and benefits (Grobler, Wörnich, Carrell, Elbert & Hatfield, 2006). Stordeur, et al. (2001), in their study on leadership, organisational stress and emotional exhaustion among Belgian hospital nursing staff. Their findings point to the inhibiting influence of effective leadership on role stress and emotional exhaustion and, by implication, on intention to leave the organisation.

Professional Turnover Intention

Much of the discussion above under organisational turnover intention also relates to professional turnover intention. Of importance to this dimension is the fact that nursing is a profession and not merely a job or career. The analysis of themes in responses to the open-ended question, discussed later in this chapter, confirms that the respondents viewed themselves as called to the profession. Furthermore, the nursing profession is of such a nature that it requires years of training in specialised skills which become more complex as the career progresses. These skills are not readily transferable to another job market and discarding these in order to learn completely new skills would be uneconomical in both professional and financial terms. In this context the comparatively high age and the predominant occupational status of the sample is relevant.

Emigration Turnover Intention

The findings that very few of the respondents intended to leave the country and stay in the nursing profession and still fewer to leave the country and change careers should be related to the analysis above as regards the demographic status of the respondents. Of particular relevance is the comparatively high average age and length of tenure. This could reflect a group which is likely to be stable in both the work and domestic / social context and thus less likely to emigrate. It could further be postulated that respondents with a tenure lower than 20 years would still be progressing in terms of skills and experience and might therefore be less marketable elsewhere.

Turnover Intention and Role Stress

The initial statistical analysis using the Pearson Correlation Coefficient revealed significant correlations between the six dimensions to role stress and all three dimensions of turnover intention. The fact that these correlations related to low turnover intention raised concerns as to their practical significance as predictors of turnover intention. In this context it is important that the Multiple Regression Analysis suggests that dimensions of role stress are potent predictors of turnover intention, among the respondents. As a result, when taken in relation to organisational turnover intention, role conflict, age, role overload, resource inadequacy and role ambiguity emerged as the strongest predictors of intention to quit among the nurses sampled. This confirms the findings in similar studies by Chang and Hancock (2003), Chang, et al. (2005) and Janssen, et al. (1999), who reported that these dimensions of roles stress were strong predictors of actual turnover and turnover intention.

Role Conflict

In this study role conflict emerged as the most significant predictor of turnover intention. These findings are confirmed by previous studies such as those conducted by Chan and Morrison (2000), Rizzo, et al. (1970) and Pandey and Kumar (2002). All these researchers found role conflict to be an important antecedent to role stress and a significant predictor of turnover intention. That role conflict was prevalent among respondents is further confirmed by the thematic analysis of the open-ended questions which revealed that responsibility without authority, expanding job descriptions, performance appraisal, staff shortages, lack of management skills and poor communication structures were among the main concerns mentioned by respondents.

A study of the literature (Bordia, et al. 2004; Elloy & Smith, 2003) revealed that lack of certainty as to job content was among the major contributors to role conflict.

This could explain the dissatisfaction expressed in relation to job description, responsibility without authority, poor communication and lack of management skills, all of which might impact negatively on the incumbents' perception of his / her role. Janssen, et al. (1999) in their study among nurses at a Dutch general hospital, found a significant relationship between unmet career expectations, job content, inadequate compensation and turnover intention. These were linked to work content variables such as role conflict and work overload.

Role Overload

The literature (Rizzo, et al. 1970; Kumar, et al. 2002) points to conjunctivity between role conflict and role overload. Although the statistical analysis confirmed the two constructs to have been measured independently, it could be argued that role overload may result in an increased perception of role conflict. Therefore it is not surprising that both role conflict and role overload emerged as significant predictors of role stress. In similar vein, staff shortages, expanding job description, responsibility without authority and performance appraisal, which emerged as themes in the open-ended responses, could be linked to both role overload and role conflict.

In an educational article which reviewed the literature on role stress among nurses in Australia Chang, et al. (2005) also found that factors such as staff shortages, age, modes of organising work and workplace violence related to the experience of role stress. In particular, work overload was cited as the major reason for nurses leaving the organisation.

Resource Inadequacy and Skills Inadequacy

Resource Inadequacy as an antecedent to Role Stress is not widely discussed in the literature (see Chapter 1). In this study the construct Resource Inadequacy was operationalised to include the lack not only of material resources and technological resources, but also a lack of assistance and support and, particularly, a lack of training aimed at acquiring the necessary skills to perform the job.

From the results it emerges that a lack of resources in the widest sense would be a strong predictor of Turnover Intention. However, resource inadequacy, as operationalised, does not emerge as a dominant theme from the open-ended responses.

The only theme which could be linked to resource inadequacy would be staff shortages in that this would result in a lack of support. It could be concluded that although, at a practical level, the lack of resources in the form of material resources, support structures and training are not verbalised as dominant concerns, they did emerge as concerns when respondents were faced with questions specifically directed at eliciting responses regarding these factors.

Additional Factors to Understanding Role Stress and Turnover Intention

The section of the survey questionnaire which provided for open-ended responses was broadly directional in that the question, "Are there any further details that could help us understand your attitudes and work experiences", solicited comments related to turnover intention and role stress.

An analysis of the main themes emerging from responses in this section revealed that inadequate compensation, not operationalised in the study, was the predominant theme. This should be related to the previous comments in this discussion regarding the fact that the study concentrated only on role stress and did not take account of other factors which could induce the respondent either to stay or to leave the organisation or profession. From the manner in which the question was phrased, it could not be deduced whether the lack of adequate compensation contributed to role stress or whether it would induce respondents to seek other employment. Certain respondents did mention that they were obliged to "moonlight". Taking on an additional burden could prove generally stressful and contribute to role stress. On the other hand, it is most probable that inadequate compensation would be a contributing factor to intention to quit.

Most of the themes emerging from the thematic analysis of the responses to the open-ended question have already been discussed as confirming the predominance of role conflict and role overload as predictors of turnover intention.

The two remaining themes identified were low staff morale and job satisfaction. The former may be interpreted as an overriding construct embracing the dimensions of role stress and the other themes identified in the discussion above. This is confirmed by Lambert, et al. (2001) who investigated the impact of job satisfaction on turnover intention among nurses. The findings of the study revealed that job satisfaction was a mediating variable on turnover intention. Interestingly, their findings also indicated that financial rewards, age, tenure, gender and education all have direct and indirect effects on both job satisfaction and turnover intention.

In the present study, only 18% of respondents declared themselves satisfied with their jobs. This is important in the context of the low scores as regards turnover intention as, again, it could be deduced that, although respondents did experience role stress, and although job satisfaction and staff morale were low, the majority of respondents did not intend to leave their organisation or the nursing profession.

It could be concluded that, as previously discussed, there might be demographic or extraneous factors inducing respondent to stay or that positive factors within the profession or work environment counteracted the negative effects of role stress and low job satisfaction. Chan and Morrison (2000) in their study referred to previously found the following to be among the reasons given for intention to stay: liking the work, cooperation, opportunity to use nursing skills, supervisory leadership, salary and caring environment.

Other Consequences of Role Stress

As indicated earlier, the Multiple Regression Analysis suggests that dimensions of role stress are potent predictors of turnover intention among the respondents. Although this might not lead directly to intention to quit, it could result in other negative consequences for the organisation and the employee and, ultimately, to turnover.

Elloy and Smith (2003), Gardulf et al., (2005) and Janssen et al., (1999) all found that the following factors were significantly related to role stress; work related exhaustion, job dissatisfaction, work-family conflict, burnout and emotional exhaustion. These negative effects were also linked to increased levels of absenteeism, low staff morale and actual turnover.

LIMITATIONS OF THE RESEARCH

The research design and the instrument used in this study were based on previous studies which investigated the relationship between role stress and turnover intention. The main objectives of those studies were to establish whether a causal relationship existed between role stress and turnover intention, as well as to identify the dominant antecedents of role stress in various sectors, including the nursing profession.

The current study differed from the above in that it sought to analyse the relationship between role stress and turnover intention, as operationalised, and to establish the relative influence of the independent variables on the dependent variable.

In hindsight, this should have been a qualitative study and one which incorporated focus groups. The study has shown that, although there is a relationship between role stress and turnover intention, there are other factors which would in practice negate or strengthen this relationship. Consequently it might be advisable to investigate the multiplicity of factors in a more focussed manner.

If focus groups were to be used, they should be differentiated according to occupational levels, age, marital status and salary band since there are indications that turnover intention may, despite the existence of role stress, be influenced by demographic factors. Similarly, in conducting the survey, a random stratified sampling method should be applied.

A further consideration arising from the current study, with its statistical significant findings, is that the population should be confined to one location (hospital) because the strength and nature of stressors are unique to a specific organisation. According to Stordeur, et al. (2001) such variations are largely due to the management / leadership style as well as the interpretation and implementation of policies and employment practices.

In short, for any meaningful intervention to occur, a study exploring the multiplicity of factors within a specific organisation needs to be undertaken. This having been said, the current study and those which preceded it, did highlight the type of factors which could to be considered and role stress is most certainly one of these.

RECOMMENDATIONS FOR NURSING MANAGEMENT

It has become evident from the study, that role stress is indeed prevalent among nurses at the three hospitals surveyed and that, although this may not directly induce nurses to leave the organisation, it may have other negative effects in the form of poor job performance, absenteeism and even burnout. The causes of role stress and, in particular, role conflict, role overload, resources inadequacy and role ambiguity, need to be thoroughly investigated and addressed.

Primarily the "push" and "pull" factors in respect of intention to quit and retention should be clearly understood and identified by management. This would enable managers to put in place strategic measures to enhance the "pull" factors and dissipate the "push" factors within the employment conditions and environment of the professional nurse.

Secondly, the findings have highlighted the need for clearer and more concise communication structures, especially as regards those policies outlining the authority, reporting and job structures of the professional nurse.

This would necessitate a complete overhaul of the job design of the professional nurse. A comparative analysis should be conducted and the design should be aligned to international and private sector benchmarks.

Thirdly, in conjunction with the above, the job description of the professional nurse should be aligned to the skills, knowledge and abilities that such person possesses after completing his / her training. It should also be linked to the individuals' experience and exposure.

It emerged from responses to the open-ended questions that existing job description, do not maximise the individual's skills, knowledge and abilities but rather dilute the professional skills, by obliging professional nurses to incorporate into their jobs, menial skills such as feeding of patients, making beds, undertaking unnecessary administration and portering of patients, to list but a few. These sundry duties could be fulfilled by trained auxiliary support staff, thus leaving the professional nurse with more time to nurse.

The restructuring of the job should be undertaken in conjunction with a review of the performance appraisals and compensation structures, which need to be linked to developmental and empowering employment principles.

Finally, management at public hospitals should be allowed more flexibility and autonomy relating to the above, because, although the public sector has a centralised management system, cognisance should be taken of the fact that one size does not fit all. Each organisation has its own unique set of dynamics which require tailor-made interventions.

RECOMMENDATIONS FOR FUTURE RESEARCH

Future research into the analysis of turnover intention and role stress within the nursing sector should firstly be qualitative in nature and a thorough exploratory analysis at the hospital should be conducted with focus groups. Ideally, the study should include those individuals who have left as the control group, thus allowing the researcher to conduct a comparative analysis between role stress experienced by those in the organisation and those who have left the organisation. This study could yield more insightful and holistic predictors of turnover intention and actual turnover than the current study. Longitudinal studies could possibly contribute more to the understanding of role stress, turnover intention and turnover. The separation of turnover intention from actual turnover leaves the researcher with only half the picture. It is important to establish why persons have left the organisation or the nursing profession and to determine the influence of role stress on these decisions.

CONCLUSION

Whilst the results of this study did confirm a causal relationship between role stress and turnover intention, they also indicated that there were, possibly, other factors which induced the respondents to remain in the organisation or the nursing profession.

From the study it emerged that age and tenure could be inhibiting factors to the intention to leave, but a more holistic exploratory study could, in all probability, reveal a multiplicity of factors inducing persons to stay, also that there might be factors other than role stress inducing persons to leave.

Overall, the findings of this study, although confirming the existence of role stress among nurses surveyed and a moderate relationship between role stress and turnover intention, also pointed to the complexity of the problem and the multiplicity of facets which need to be taken into account when investigating turnover intention.

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SURVEY

Of Registered Professional Nurses in the Western Cape

August 2007

Dear Participant

We are conducting research on turnover intention amongst nursing personnel in the academic hospitals for our Masters Dissertations at the University of Cape Town. In order to complete this research we are distributing an anonymous and confidential questionnaire.

Please respond to the statements in the attached questionnaire. The statements are related to your personal work attitudes, experiences and behaviour. It should not take you more than 20 minutes to complete the entire questionnaire. Please ensure that you respond to every question. There are no right or wrong answers to the questions.

All information provided will be treated in absolute confidence. No individual respondents can be identified. Your name does not appear anywhere on your answer booklet, to maintain the anonymity and confidentiality of the responses.

Please complete and return the questionnaire to the designated box in reception by.

This is an important study and your cooperation in providing accurate information is invaluable to ensure that a true picture is formed. Thank you for your assistance.

Yours faithfully,

Eloise M. Abrahams

Indicate the extent of your agreement with each of the following statements by ticking a number from 1 to 5 on each line.

Your organisation		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I would like to leave this hospital	1	2	3	4	5
2	I plan to leave this hospital as soon as possible	1	2	3	4	5
3	Within the next year, I hope to have left this hospital	1	2	3	4	5

Your profession		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4	I would like to leave the nursing profession	1	2	3	4	5
5	I plan to leave the nursing profession as soon as possible	1	2	3	4	5
6	Within the next Year, I hope to have left the nursing profession	1	2	3	4	5

Indicate the extent of your agreement with each of the following statements by ticking a number from 1 to 5 on each line.

Your job conditions		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7	I <u>do not</u> have enough of the supplies that I need to do my job	1	2	3	4	5
8	I <u>do not</u> have enough technological resources to do my job	1	2	3	4	5
9	I <u>do not</u> have enough administrative support to do my job	1	2	3	4	5
10	I receive assignments <u>without</u> adequate resources and materials to complete it	1	2	3	4	5
11	I receive assignments <u>without</u> sufficient help from others to complete it	1	2	3	4	5
12	I have received insufficient training for the tasks I am expected to do	1	2	3	4	5
13	I need to acquire new skills to do my work satisfactorily	1	2	3	4	5
14	I do not feel adequately trained in certain aspects of my job	1	2	3	4	5
15	There is insufficient opportunity to get the training I require	1	2	3	4	5
16	My job responsibilities <u>are not</u> clearly defined	1	2	3	4	5
17	I <u>am not</u> certain about how much authority I have	1	2	3	4	5
18	I <u>do not</u> know exactly what is expected of me in my job	1	2	3	4	5
19	I <u>do not</u> know what my responsibilities are	1	2	3	4	5
20	Explanation <u>is not</u> clear of what has to be done	1	2	3	4	5

Your demographics...

(This information is confidential. Do not put your name on any part of this questionnaire).

D1. **Gender:**

- Male
 Female

D2. **Marital Status:**

- Married
 Single
 Other - Specify _____

D3. **Age:**

D4. **If you were to leave your current employer, where are you most likely to go:**

- Stay in South Africa and work in nursing
 Stay in South and change careers
 Go overseas and work in nursing
 Go overseas and work in another career
 Other, please specify

Please specify home language

D5.

D6. **Occupational Level:**

- Chief Professional Nurse
 Senior Professional Nurse
 Professional Nurse
 Clinical Nurse Practitioner
 Other, specify

.....

D7. **Work status:**

- Full-time

D8. **On average, how many hours do you work per week?**

D9. **Years with current organisation:**

D10. **Years of experience in the nursing profession:**

Thank you for completing this survey. Your participation is much appreciated

Indicate the extent of your agreement with each of the following statements by ticking a number from 1 to 5 on each line.

Your job conditions		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21	I work under conflicting policies or guidelines	1	2	3	4	5
22	I have to "bend the rules" to carry out some assignments	1	2	3	4	5
23	I receive incompatible requests from two or more people	1	2	3	4	5
24	My time is often spent on "unnecessary work" not central to my job	1	2	3	4	5
25	I have additional responsibilities that take me away from my primary tasks	1	2	3	4	5
26	I <u>do not</u> have enough time to complete my work	1	2	3	4	5
27	I have to work very fast in my job (just to keep up with the workload)	1	2	3	4	5
28	I have a very heavy workload, perhaps too heavy	1	2	3	4	5
29	I have too much responsibility in my job	1	2	3	4	5
30	I often have to work extra hours to complete my tasks	1	2	3	4	5
31	The tasks in my work seem to change too often	1	2	3	4	5
32	The responsibilities in my work seem to change too often	1	2	3	4	5
33	The person I report to at work seems to change too often	1	2	3	4	5
34	I often have to adjust to changes at work	1	2	3	4	5
35	I often have to learn new sets of skills to keep up with changes at work	1	2	3	4	5

Your turnover intention

The following number responses should be circled in a answering the next four questions.

<i>Very good</i>	<i>Good</i>	<i>So-so</i>	<i>Not so good</i>	<i>Bad</i>
5	4	3	2	1

How would you rate your chances of?

36.	Quitting in the next three months	5	4	3	2	1
37.	Quitting in the next six months	5	4	3	2	1
38.	Quitting sometime in the next year	5	4	3	2	1
39.	Quitting sometime in the next two years	5	4	3	2	1

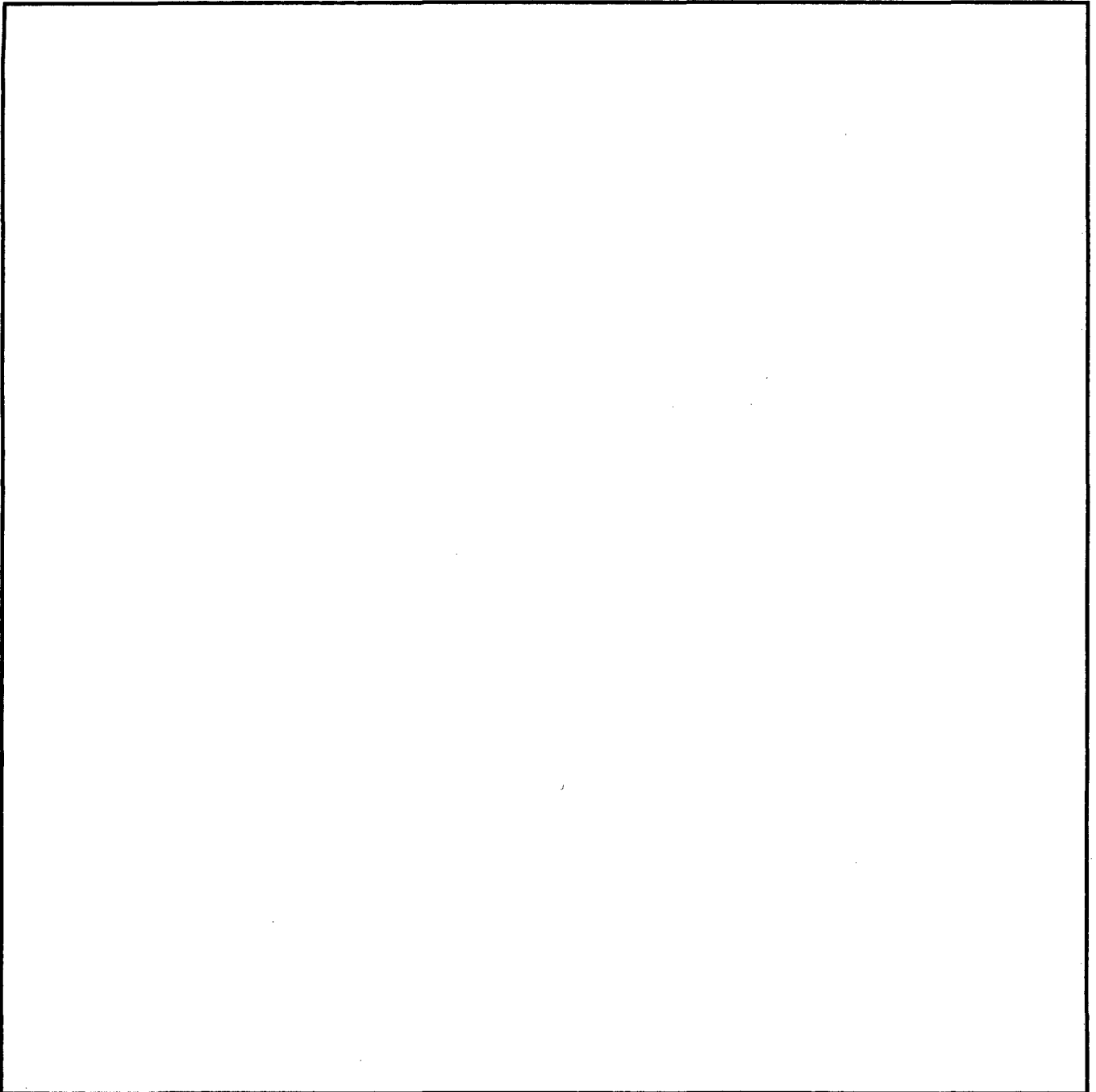
Indicate the extent of your agreement with each of the following statements by ticking a number from 1 to 5 on each line.

Your emigration intention		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
40	I would like to leave South Africa	1	2	3	4	5
41	I plan to leave South Africa	1	2	3	4	5
42	Within the next year, I hope, to have left South Africa	1	2	3	4	5

This is your space!

Are there any further details that could help us understand your attitudes and work experiences?

Please note these in the space provided below:

A large, empty rectangular box with a black border, intended for the respondent to provide further details about their attitudes and work experiences.

Please return your questionnaire to the designated box

APPENDIX B



University of Cape Town ETHICS COMMITTEE

Commerce Faculty

2.21 Leslie Commerce Building Upper Campus
Postal address: UCT Private Bag Rondebosch 7701
Telephone: (021) 650 2558
Fax: (021) 650 4369
Email: Nomonde.Matomela@uct.ac.za

22 June 2007

Eloise M Abrahams

Dear Eloise

PROJECT TITLE: AN ANALYSIS OF THE RELATIONSHIP BETWEEN ROLE STRESS AND TURNOVER INTENTIONS AMONGST NURSES AT MORE THAN ONE ACADEMIC HOSPITAL IN THE WESTERN CAPE

Having received your documentation associated with your project titled "**An analysis between role stress and turnover intentions amongst nurses at more than one academic hospital in the Western Cape**", the Chairperson, Prof. Jeff Bagraim hereby gives your project provisional approval on behalf of the Commerce Faculty Ethics in Research Committee.

Please note that if you make any substantial change in your research procedure as it impacts upon the experiences of your subjects, you must re-apply to the Committee for approval.

I wish you good success with your research.

Regards,

NOMONDE MATOMELA

For Prof Jeff Bagraim
Chair, Ethics in Research Committee



Departement van Gesondheid

Department of Health

iSebe lezewMpilo



Verwysing:
Reference:
Isalathiso:

Telefoon:
Telephone : 658-5008
Ifowuni:

Navrae:
Enquiries: Mrs S.E. Roodt

Faks:
Fax: 658-5326

Datum:
Date: 16 August 2007

Professor J. Bagraim
School of Management Studies
University of Cape Town
Private Bag
RONDEBOSCH
7701

Dear Professor Bagraim

RE : PERMISSION TO CONDUCT RESEARCH : ME VAN DER MERWE AND E. ABRAHAMS

Your letter dated 31 July 2007 refers.

Permission is given to Messrs M.E. van der Merwe and E. Abrahams to distribute their questionnaires. I have met with both the Masters students and we had a discussion on the research projects.

We look forward to the results and wish both of them success with their projects.

Yours faithfully,

Signed by candidate

MRS S.E. ROODT
DEPUTY DIRECTOR : NURSING

SER/fd-DOH LETTERHEAD.2007.08.17