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Nursing work: challenges for health management in the Northeast of Brazil

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Abstract

Aim: Social exchange theory is used as the framework to examine the interaction between supervisor–subordinate relationships, training and affective commitment for Northeast Brazilian public sector nursing professionals.

Background: There are continuing challenges to nursing management worldwide in terms of the supply of nursing professionals, their work relationships, nurse training and commitment to their employing organisations. The interplay between these factors for nurses in the Northeast of Brazil has not been well understood.

Methods: Quantitative data were collected from 550 nursing professionals using a cross-sectional, survey-base design. Qualitative data were collected from 25 participants using in-depth interviews and focus group discussions.

Results: Using path analysis, and the ordinary least squares approach, the findings demonstrated a significant, but weak, linkage between supervisor–subordinate relationships, training and organisational commitment. The qualitative data suggest that contracting out may be a causative factor.

Conclusions: Healthcare managers in Brazil need to create more positive environments to strengthen supervisor–nurse relationships, improve the provision of training and to strengthen organisational commitment.

Implications for Nursing Management: Healthcare policy-makers in hospital can make significant contributions to improving organisational commitment by reducing multiple job holding, improving the ratio of registered nurses to nursing technicians/assistants and beginning nurse supervision training in effective people management.

Keywords: Affective commitment; supervisor-subordinate relationship; training; nursing management; public sector.

In the developed nations of the world, such as in Australia and in other Organisation for Economic Co-operation and Development (OECD) countries, a major issue for nursing management is the shortage of nurses (Productivity Commission 2005, OECD 2007),

accompanied by well-documented poor levels of nurse commitment and job satisfaction (Aiken et al. 2001, Buchanan & Considine 2002, Brunetto & Farr-Wharton 2006). Past research suggests that the main factors affecting supply include the ageing population, inadequate numbers attracted to the profession and high turnover (Schofield & Beard 2005). Allied to nurse shortages there are continuing challenges to nursing work worldwide in terms of the effects of these factors on work relationships, training and development practices and commitment to the organisation. Such challenges are shared in the BRICS (Brazil, Russia, India, China and South Africa) countries such as Brazil (Bliss 2010, Victora et al. 2011). However, not much research has been undertaken in Brazil on nursing work, especially in relation to the links between supervisor–subordinate relationships, training and organisational commitment.

Brazil has three types of nursing professionals: registered nurse – RN (university level), nursing technician – NT (18-month diploma) and nursing assistants – NA (1-year diploma). Since 1986, in accordance with Federal Law 7498, it is compulsory for nursing professionals, not only to be legally qualified, but also to be members of a Regional Council of Nursing. The nursing scope and practice for nursing technicians and nursing assistants, however, is narrowed because the work they do needs to be supervised by a registered nurse and perhaps they are better considered as 'paraprofessionals'. The typical supervisory structure for nurses in the Northeast of Brazil is for each hospital to have a director of nursing, who is a member of the hospital executive, with a nursing supervisor reporting, who is responsible for nursing functions in all operating units. The nursing unit coordinators are responsible to the nursing supervisor for all aspects of the operations of the unit and their registered nurses report directly to the coordinator for both clinical purposes as well as staff management. The nurse technicians and nurse assistants report to registered nurses to whom they are responsible for the clinical management of patients.

Between 2000 and 2010, the number of registered nurses rose from 23 468 to 287 119. However, over that period, the number of nurse technicians rose from 17 573 to 625 862 and the number of nurse assistants rose from 92 946 to 533 422 (COFEN – Conselho Federal de Enfermagem 2011). In July 2010, the number of professional nurses in Brazil was 1 480 653 with 18% registered nurses, 42.50% nursing technicians, 37.60% nursing assistants and 1.54% nursing attendants. The last category, nursing attendant, is now abolished in many

States in Brazil, such as Maranhao, in the Northeast of Brazil, where 5742 are registered nurses, 16 517 are nursing technicians and 5053 nursing assistants (COFEN 2011). Clearly an increase in the para-professional nursing classifications has resulted in a growing supervisory overload for registered nurses, and a possible concomitant decrease in the standard of nursing professionalisation applied at the bedside, which is now, more often than not, provided by nurse technicians, rather than registered nurses.

Another challenge for nursing work in the Northeast of Brazil has been the introduction and expansion of the contract employment system in both the public and private hospital sectors. For example, in the major teaching hospital (HUUFMA – University Hospital of the Federal University of Maranhao) in the Northeastern State of Maranhao, the number of permanent nursing staff decreased by 5.7% between 2004 and 2009 and the number of contract nursing staff increased 247.4% (HUUFMA 2009). This development, which is allied to and supports the low wage structure for nursing professionals, seems likely to have a consequent detrimental impact on nursing work in terms of the provision of training (Cameron 2000, Campbell 2001, Guest 2004) and the quality and consistency of patient care, and certainly is providing a significant impact on nursing management practices. Findings from studies conducted in Brazil with health workers (e.g. doctors and nurses) under the contract employment system, suggest that the poor conditions of contract working have had a negative impact on organisational outcomes in terms of both high turnover and low job satisfaction (Medeiros et al. 2010). According to Victora et al. (2011), based on their study on health management in Brazil, poor quality care in Brazil is related to institutional issues such as a high turnover of health workers. One of the recommendations proposed by Victora et al. to improve the quality of patient care in Brazil include an investment in short training courses in specific areas for health care professionals, especially in rural areas.

Multi-jobbing is yet another relevant factor that is likely to have a negative influence on nursing work in Brazil. Although no reliable hard data on multijobbing are currently available, especially in the State of Maranhao, evidence from other States of Brazil suggests that a significant number of Brazilian nursing professionals hold two or more jobs in order to achieve a living wage. For example, findings from a study conducted with 543 registered nurses from ten major States of Brazil (not including the Northeast State of Maranhao), demonstrated that 55.5% of nurses are the main providers for their immediate and extended families and 40.8% had two or more jobs (Varella 2006). In a situation of nursing professional surpluses and therefore high levels of competition for jobs, on-the-job relationships, especially between supervisors and employees, become a crucial factor for

nurses' positive work-related outcomes. With multi-jobbing meaning that many nursing professionals are overworked and tired, training programmes may be ignored and not delivered effectively. This situation is exacerbated by the high levels of contract employment in which contract nurses are often not offered any career-enhancing training opportunities. Findings from a study conducted in an Australian hospital (Cameron 2000) suggest that nurses under contract had fewer opportunities to receive training and development. These issues are likely to have a negative impact on nursing professionals' level of commitment to the organisation. Therefore, the relationship between supervisor-subordinate relationships, training and commitment to the organisation is important to explore in Brazil in order to draw conclusions on the challenges facing nursing work and nursing management.

Theoretical Background

Social Exchange Theory

One of the more useful frameworks for exploring workplace relationships is social exchange theory (SET). Interdependencies are recognised as the critical factors in developing relationships, which are then based on 'exchange', conducted according to certain rules and norms that are specific to the relationship and the context (Cropanzano & Mitchell 2005). Of most interest for the present purpose, the relationship between supervisor and subordinates provides a clear case of agreed (more or less, depending on organisational environment) rules and norms of exchange. Social exchange theory provides the theoretical basis for leader–member exchange (LMX) and researchers have demonstrated a link between LMX and organisational commitment (Masterson et al. 2000, Eisenberger et al. 2001). Employees who are in high LMX relationships are more likely to receive better training opportunities, gain promotions and to develop satisfying careers or to obtain more interesting work (Wang et al. 2005). Based on SET theory, the better the exchange of resources (knowledge, information-sharing, trust and respect, opportunities to develop etc.), the better the quality of the relationship between supervisor and subordinate, which serves to build and strengthen trust and commitment to the organisation (Cropanzano & Mitchell 2005, Hooper & Martin 2008). This paper contributes to the literature by exploring the relationship between supervisor–subordinate relationships, training and affective commitment for nursing professionals in the Northeast of Brazil. Exploring levels of affective commitment to the organisation can help to draw out and clarify assumptions about nursing professionals' work, nurse management

practices and also the quality of nurse management. This paper uses social exchange theory (SET) as a framework to examine how on-the-job relationships, especially with the supervisor, and training practices influence affective commitment to the organisation. Social exchange theory is an important tool for exploring the dynamics of workplace relationships (Graen & Uhl-Bien 1995). High quality reciprocal relationships in the workplace develop as a result of positive supervisor–subordinate relationships, which means a better exchange of resources (knowledge, opportunities for training) that serves to build and strengthen trust and commitment (Hooper & Martin 2008, Rodwell et al. 2009). The association of supervisor–subordinate relationships and training, or the development of skills and knowledge, may be an important factor influencing affective commitment to the organisation.

Supervisor-subordinate relationships

Leader-member exchange (LMX) theory provides a set of ideas and insights for exploring the supervisor–subordinate relationship. In this paper, the term supervisor–subordinate relationship will be used in ascribing LMX, which is the description of the variable in the model. At the heart of LMX is the insight that supervisors treat subordinates differently and that subordinates are provided with varying levels of support and encouragement, information, trust and participation in decision-making (Graen & Uhl-Bien 1995). High quality or low quality LMX relationships develop according to the quality of interpersonal exchange between supervisors and subordinates (Mueller & Lee 2002). Past research has demonstrated a positive relationship between LMX and training (Scaduto et al. 2008, Brunetto et al. 2011). In relation to Brazil, the majority of research on work relationships among nursing professionals is qualitative in nature (Stumm et al. 2006, Dalmolin et al. 2009, Goncalves et al. 2009) and it is clear that follow-through quantitative or mixed methods research is also required. It is not clear at this time whether or not effective supervisor–subordinate relationships are likely to improve satisfaction with training and to enhance nursing professionals' levels of affective commitment in the Northeast of Brazil, given the particular circumstances shaping nursing management in that region.

Training

Training involves the systematic and/or opportunistic development of the knowledge, skills and expertise required by a person effectively to perform a given task or job (Patrick 2000).

There is a reasonable consensus that effective training and development practices develop employees by improving their knowledge, skills and abilities and enhance their levels of their commitment to the organisation (Harel & Tzafrir 1999). This is supported by empirical evidence on the link between training practices and employee commitment to the organisation (Bartlett 2001, Bartlett & Kang 2004, Brunetto et al. 2012a, Vidal-Salazar et al. 2012). In Brazil, training is a critical concern for healthcare management, not because of retention, but because training is becoming an ever more important motivator for nurse professionals and a key factor in the search to improve hospital efficacy, especially in terms of the quality of patient care. Several papers identify a need for specialised on-going development requirements for nurses in Brazil, such as dealing with dying patients, dealing with alcohol and drug abuse and continuing education and training (Villa et al. 1999, Pillon et al. 2003, de Araujo & da Silva 2004). The need for research on training for nurses has been highlighted (Carlisle et al. 2011). It seems that, in a work environment with a surplus of staff, the quality of the relationship between supervisor–subordinate and the consequent influence on the provision of adequate training are likely to be key strategies for enhancing employee commitment to the organisation.

Affective Commitment

Allen and Meyer (1996:252) defined affective commitment to the organisation as 'a psychological link between the employee and his or her organisation that makes it less likely that the employee will voluntarily leave the organisation'. Affective organisational commitment is considered a major determinant of organisational effectiveness (Meyer & Herscovitch 2001), as high employee commitment has been related to increased motivation and job satisfaction, lower labour turnover and improved job performance (Addae et al. 2008). Previous research has demonstrated a relationship between supervisor–subordinate relationships and organisational commitment (Farndale et al. 2011, Farr-Wharton et al. 2011, Brunetto et al. 2012b). In other words, if staff feel satisfied with their work conditions and the way they are treated by their supervisors they are more likely to have better training and higher levels of affective commitment to the organisation, and to provide a positive service experience for customers/ patients (e.g. doing the little bit extra that counts). The hypotheses to test the inter-relationships of these various components of workplace context (supervisor–subordinate relationships, training and affective commitment) are:

Hypothesis 1: There is a significant and positive relationship between supervisor–subordinate relationships and training and development practices for Northeast Brazilian nursing professionals.

Hypothesis 2: There is a significant and positive relationship between training and development practices and affective commitment for Northeast Brazilian nursing professionals.

Hypothesis 3: There is a significant and positive relationship between supervisor–subordinate relationships, training and development practices and affective commitment for Northeast Brazilian nursing professionals.

Methods

This study uses mixed methods, combining aspects of both qualitative and quantitative research (Creswell 2003). Quantitative data were obtained using a cross-sectional, survey-based design, in order to test the link between supervisor–subordinate relationships, training and organisational commitment. Qualitative data obtained in this research included seven in-depth interviews (four in hospital 1 and three in hospital 2) and two focus group discussions in each hospital (one with registered nurses and the other with nursing technicians). The main objective for gathering the qualitative data was to garner in-depth information to supplement and explicate the quantitative data in order to advance the understanding of relevant issues related to supervisor–subordinate relationships, training and commitment levels of Brazilian nursing professionals.

Sample

This study was undertaken in the public hospital based environment, in the Northeast of Brazil, in the State of Maranhao. The sample for this study included nursing professionals from two medium-sized teaching hospitals, with 300 plus beds, in one instance catering for a wide range for admissions (hospital 1), and in the case of hospital 2, primarily obstetrics and Gynaecology.

Measures

A questionnaire was developed using parts of four validated instruments, using a 6-point Likert-type scale ranging from 1 (strongly agree) to 6 (strongly disagree), as follows: ‘leader–

member exchange' was measured using a six-item Mueller and Lee's (2002) instrument to measure the satisfaction of nurses with the quality of the relationship with their supervisor. An example of a statement is 'My supervisor is satisfied with my work'. 'Training' was measured using the six-item Meyer et al. (1993) instrument to test the nurses' satisfaction with training and development practices. The sample items included: 'There are lots of training opportunities provided for me in this hospital' and 'I am satisfied with the training I have received so far'. 'Affective commitment', the dependent variable, was measured using Meyer and Allen's (1991) five-item instrument to test the nurses' level of affective commitment to the organisation. Sample item included: 'I would be very happy to spend the rest of my career with this hospital'. The questions used for the in-depth interviews were the same used for the focus groups, comprising demographic information and other questions, including 'the best thing about nursing'; 'the worse thing about nursing'; quality of communication processes; and 'what is rewarding working in the hospital'.

Procedure

To gather data from nursing professionals, 1000 anonymous surveys were distributed to the two hospitals and all nursing professionals including the director of nursing, nursing unit coordinators, registered nurses, nurse technicians and nurse assistants were invited to participate. The response was 550 useable surveys – an overall response rate of 55%. Once all completed questionnaires were collected and analysed, the results were compared with past research. The sample comprised 494 females (89%). In terms of categories of nursing professionals, 23.6% were registered nurses, 42% were nurse technicians and 34.2% were nurse assistants. Among the registered nurses, two (0.4%) were nursing supervisors (one in each hospital) and 13 were nursing unit coordinators (2.5%). In addition, 66% had permanent jobs and 60.9% had two or more jobs. Demographic information for the survey respondents is shown in Table 1.

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Insert Table 1 about here
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The participants in the in-depth interviews were obtained by asking selected senior individuals if they were willing to participate in the study. Seven in-depth interviews were conducted including the director of nursing, two nursing supervisors and four nursing unit coordinators. In the case of the participants in the focus group discussions, the supervisors of the nursing department in each hospital invited registered nurses and nursing technicians to

participate in the study. Ten registered nurses (six for hospital 1 and four from hospital 2) and eight nursing technicians (four in each hospital) accepted the invitation. Both in-depth interviews and focus group discussions were undertaken on-site and at times convenient for the participants. The in-depth interviews and focus group discussions lasted approximately half an hour and 1 hour, respectively.

Data analysis

Path analysis was used to test the 'goodness of fit' of the proposed model and to test the relationship between nurses' satisfaction with supervisor–subordinate relationships, their satisfaction with training and the level of affective commitment. Path analysis using an ordinary least squares (OLS) approach was used to test the hypotheses. The OLS is an explanation of variance and the overall R2 measure identifies the 'goodness of fit' overall for the proposed model (Ahn 2002). Path analysis permits a set of relationships between one or more independent variables into the bigger equation (i.e. supervisor–subordinate relationships and training) to predict the dependent variable (i.e. affective commitment) (Tabachnick & Fidell 2007). The qualitative data were transcribed, translated and thematically analysed using a pattern-matching approach (Yin 2003). Once the data were analysed, the results were compared with findings from past research (Babbie 2004).

Factor Analysis

The findings detailed below are the results of a confirmatory factor analysis, given that all variables in this study have been validated in previous research. The correlation matrix identified a considerable number of correlations exceeding 0.3, indicating the matrix was suitable for factoring. The Bartlett's test of sphericity was significant (chi-squared value = 5.018,76, $P < 0.000$, df 136) and the KMO measure of sampling adequacy was 0.89, greater than the 0.7 requirement. When principal axis factoring was undertaken to extract the variables, three factors had eigenvalues >1 and 64.19% of the variance could be explained using these three factors, ensuring the validity of the variables. The factor transformation matrix suggests a relatively high correlation between the variables. All of these measures indicate that the data are suitable for a factor analysis (Coakes & Steed 2011). The questions related to the three factors are listed in Table 2.

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Insert Table 2 about here

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Results

Quantitative results

The means, standard deviations, correlations and reliability for the variables in this study are reported in Table 3. Correlation coefficients show the strength of the linear relationships between supervisor–subordinate relationships, training and affective commitment, as well as for the demographic variables – 'gender' and 'age' (control variables). The reliability was tested via Cronbach's alpha scores. Coefficient alphas were all acceptable because they were above the minimum requirement of 0.7 (Nunnally & Bernstein 1994), ranging from 0.83 to 0.91.

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Insert Table 3 about here

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In order to address the first hypothesis (*There is a significant and positive relationship between supervisor–subordinate relationships and training and development practices for Northeast Brazilian nursing professionals*) a linear regression was undertaken. This hypothesis is accepted because findings suggest a positive and significant relationship. The R^2 value suggests that 13.1% of the variance of training can be explained by supervisor–subordinate relationships (see Table 4).

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In order to address the second hypothesis (*There is a significant and positive relationship between training and development practices and affective commitment for Northeast Brazilian nursing professionals*) a linear regression was undertaken. This hypothesis is accepted because findings suggest a positive and significant relationship. The R^2 value suggests that approximately 14% of the variance of affective commitment can be explained by training (see Table 5).

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Insert Table 5 about here
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To address the third hypothesis (*There is a significant and positive relationship between supervisor–subordinate relationships, training and development practices and affective commitment for Northeast Brazilian nursing professionals*), a linear regression was undertaken. The hypothesis is accepted because findings suggest a significant and positive relationship. The R^2 value suggests that approximately 16% of the variance of affective commitment can be explained by LMX and training. Age and gender were included as control variables and were found to be not significant (see Table 6).

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Insert Table 6 about here
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Qualitative results

The analysis of the data was carried out using four prompt questions including 'the best thing about the nursing profession', 'the worst thing about the nursing profession' and 'what is rewarding about working in this hospital'. The results regarding these issues are provided below.

The best thing about the nursing profession

It was evident from the participants' responses that they like the work they do and that their main aim as professionals is caring for patients. This is evident from the following statements by a registered nurse and also a ward coordinator:

> *Is the feeling of helping and have a return that is the patient's improvement, the improvement of quality of life and satisfaction when we get to see the improvement of the patient (Registered nurse – Hospital 1).*

> *I believe that what is best in nursing is the giving of care to the patients, where people often give to the detriment of their own family care (Ward Coordinator – Hospital 2).*

The worse thing about the nursing profession

Overall, the worse thing about the nursing profession results from a combination of factors including 'low wage', 'heavy workload' and 'multi-jobbing'. The following statements by the director of hospitals 1 and 2 and two registered nurses highlight these issues:

> *I think nursing needs to be better remunerated, so that the professional can work in one place and can better assist the patient. Nursing management needs to reduce the labor workload, because our workload is still too large. And the wages are not comparable, which makes people look for other jobs, because of being overworked and not providing the care that we should. (Director – Hospitals 1 and 2).*

> *The salary we receive for the number of hours worked often does not compensate and that's why today I have just one job because it is not worth of. There was a time when I had three jobs, then I'd have to run all the time and at the end of the month I'd be dead tired and the money that we earn you can't afford either a bed in an intensive care, so it is not worth. (Registered nurse – Hospital 1).*

> *The need for nurses to take on several jobs is very bad and intervenes a lot because you'll have to work in multiple locations in order to have a better living, to be able to maintain a better quality of life. (Registered nurse – Hospital 1).*

What is rewarding about working in this hospital

Overall, many respondents agreed that 'good relationships with workmates' was one of the important rewarding factors about working in the hospitals studied. Other factors include 'job satisfaction', 'commitment to the nursing profession' and 'commitment to the patient'. Typical responses by a supervisor, a registered nurse and a nursing technician included:

> *Even with the problems we have in relation to human resources, I think the work environment, in relation to people is a good climate. It is like if it were an extension of my home because many of the people who work here are my personal friends as well. (Supervisor – Hospital 2).*

> *I feel happy to come to the hospital, even tired, because I find satisfaction in caring, for people... and I enjoy working. I feel useful. It is nice work here. (Registered nurse – Hospital 2).*

> *I think it is nice to work here because I like what I do, I like the ward on which I work, and I like the fellows who work with me. (Nursing technician – Hospital 2).*

Discussion

This paper used social exchange theory to explore the linkages between supervisor–subordinate relationships, training and development practices and affective commitment to the organisation for nursing professionals in the Northeast of Brazil. The path analysis (see

Figure 1) demonstrates a significant statistical linkage between the impact of supervisor-subordinate relationships (LMX) and training on nursing professionals' levels of affective commitment. This finding corroborates past research with nurses examining the links between LMX and training (Scaduto et al. 2008, Brunetto et al. 2011) and training and organisational commitment (Nelson 2008, Brunetto et al. 2012a, Vidal-Salazar et al. 2012). However, Northeast Brazilian nurses' levels of satisfaction with supervisor–subordinate relationships and their satisfaction with training provide an impact of only 15.08% on affective commitment to the organisation. It seems that supervisor–subordinate relationships and satisfaction with training practices may not be the most influential factors in improving levels of affective commitment to the organisation/hospital or may be mediated by other factors. This relatively low level of impact points toward an in-depth examination of other factors impacting on levels of supervisor–subordinate relationships and training.

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Cost cutting and also the widespread practice of multiple-job holding have clearly resulted in a reduction in the provision of training for Brazilian nursing professionals and their capacity to undertake either on-the-job or off-the-job training. Nurses under contract have fewer opportunities to receive training and development, according to Australian research (Cameron 2000). Demographic information demonstrates that nearly 32% of the sample of nursing professionals in this study are under contract and nearly 61% have two or three jobs. The mean for training (3.78, see Table 6) demonstrates that nursing professionals in this study were not very satisfied with training practices.

The findings from the qualitative data also demonstrate that many nursing professionals have limited contact with their ward coordinators, especially when one or both have two or three jobs. Based on social exchange theory, this limitation on the quality of relationships within the Northeast Brazilian nursing environment is a barrier to building and strengthening trust and commitment (Cropanzano & Mitchell 2005, Hooper & Martin 2008), and also leads to a reduction in the likelihood of receiving better training opportunities (Wang et al. 2005).

Findings from a study with doctors and nurses in the South of Brazil (Medeiros et al. 2010) indicates that contract health workers across the healthcare professions, such as doctors and nurses, have no career structure, no job security and no fringe benefits. The findings from this research also suggest that the main outcomes for doctors and nurses under contract

include high turnover and low job satisfaction. According to Victora et al. (2011), based on their study on health management in Brazil, poor quality care is related to institutional issues such as a high turnover of health workers. When contract working and multi-jobbing are combined, it seems likely that negative consequences for nursing work will result.

An unforeseen consequence of the application of contracting out of nursing work has been the fragmentation of jobs. That is, nursing staff requirements has been broken down from full-time positions to a series of part-time contract requirements. This has enabled the multi-job holding blight, which reduced training participation, due to a lack of availability of nurses to take advantage of what training opportunities are provided. This high level of contracting clearly has had an impact on the work environment and social relationships, in addition to the impacts on training and education (Cameron 2000, Campbell 2001), with a consequent impact on the levels of affective commitment to the organisation.

Limitations

This study has a number of limitations. Firstly, this study is confined to the Northeast of Brazil and cannot be taken as representative of the whole of Brazil. Second, this study is confined to public sector hospitals and therefore any significant differences between public and private sector nurse management are not described. In addition, the self-reporting techniques used in this study to gather information may be open to common method bias (Zigmund 2003), which may influence the significance of relationships between variables. However, Spector (1994 p. 386) argues that self reporting methodology is useful in providing trends that in turn provide an understanding about employees' feelings and perceptions, as long as the literature review and other evidence supports the inferences and interpretations made about the data.

Implications for Management

The low impact of both supervisor–subordinate relationships and training on affective commitment to the organisation for nursing professionals in the Northeast of Brazil has some relevant implications for nursing management and the health care system, especially because it indirectly affects the quality of patient care. The analysis in this paper suggests that the Brazilian healthcare system has been compromised in a number of key respects, such as an increase in contracting out and multiple-job holding, which has clearly resulted in a reduction

in the provision of training for Brazilian nursing professionals and their capacity to undertake either on-the-job and off-the-job training. Research by Cameron (2000) supports this conclusion with respect to the provision of professional training. Findings from a study conducted by Victora et al. (2011) on health management in Brazil suggest the quality of patient care is threatened by a lack of appropriate training for health care workers, given the issue of high turnover among health workers in Brazil. One of their specific recommendations is for greater investment in short training courses in specific areas that could contribute to an improvement of quality care in Brazil, especially in rural areas. Clearly, the lack of appropriate training for nursing professionals in Brazil not only has a detrimental impact on affective commitment to the organisation, as demonstrated in this current study, but particularly can have a negative impact on the quality of patient care.

Another factor that has compromised the Brazilian healthcare system is the higher proportion of nurse technicians compared with registered nurses, who are nevertheless responsible for the close supervision of the work of nurse technicians, in accordance with Law. This situation places extra strain on work relationships, as registered nurses (including nurse unit coordinators) are now required to spend a disproportionate amount of time supervising the work of nurse technicians, instead of primary patient care. In order to improve a hospital's performance, especially in terms of the quality of patient care (and consequent reduction in costs), the nursing workforce needs to be re-balanced and managed more effectively. This can be done by improving the human resource management (HRM) function in the hospitals and the role of the CEO is crucial in creating a strategic HRM function by providing legitimacy, leadership and resources (Stanton et al. 2010). The contribution of health systems, HRM policy groups and hospital HRM units to developing effective responses to these challenges is of the utmost importance. The results of this study suggest that HRM policy-makers and HRM units in hospital can make significant contributions to improving organisational commitment in the following respects, at least:

- reduce multiple job holding among nursing professionals by moving towards a more realistic and satisfactory wage structure that meets the livelihood needs of nursing professionals and also provides opportunity for further training;
- improve the ratio of registered nurses to nursing technicians/assistants to levels that are commensurate with high standards of patient care and quality health outcomes that provide better levels of satisfaction for clients of the health system;

- begin nurse supervision training in effective people management at an early career point and ensure that people and team management skills are well developed when nurse supervisors are first appointed and thereafter, well maintained.

Conclusion

The major findings of this paper suggest that supervisor–subordinate relationships and training have a low impact on affective commitment to the organisation. The qualitative data provide a strong indication that a number of structural factors, such as contracting out and the consequent low wage structure, provide challenges for health management in the Northeast of Brazil. These challenges include the provision of training, particularly, and the quality of supervisor–subordinate relationships, which are critical in relation to levels of affective commitment to the organisation and also the quality of patient care. An over-use of contracting out, a major extension of employment of paraprofessionals (nurse technicians and nurse assistants) and the maintenance of a low wage structure for nursing professionals, create situations of multi-jobbing and consequent threats to the quality of nursing work and health outcomes. However, the results of this study suggest that healthcare managers in Brazil, human resource management (HRM) units, including policy developers, need to create more positive environments, to strengthen supervisor–nurse relationships, improve the provision of training and to strengthen organisational commitment.

The significant organisational changes involved, such as reducing the amount of contract work, rebalancing professional and non-professional nursing numbers, and enhancing training and development opportunities will make strong demands on nursing management. Portoghese et al. (2012) highlight the importance of the quality of supervisor–subordinate relationships for successful organisational changes.

This research should be replicated in other regions of Brazil, especially in the South/Southeast. Useful insights should also issue from an extension of this study to private sector hospitals, which are becoming more prominent in the Brazilian health system. Finally a comparative study between Brazil and other developing countries, as well as OECD countries, would be fruitful.

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Appendix One

Table 1: Demographics of survey respondents

Variable		Nurses	%
Categories of Nursing Professionals	**Registered Nurse	130	23.6%
	Nurse Technician	231	42%
	Nurse Assistant	188	34.2%
	Missing	1	.2%
	Total	550	
Gender	Male	55	10%
	Female	491	89.3%
	Missing	4	.7%
	Total	550	
Age	Less than 30 years	63	11.5%
	30–45 years	262	47.6%
	>45	205	37.3%
	Missing	20	3.6%
	Total	550	
Type of Employment	Permanent	363	66%
	Contract	174	31.6%
	Missing	13	2.4%
	Total	550	
Hours per week	20-40	306	55.6%
	41-80	242	44%
	>80	2	.4%
	Total	550	
Number of Jobs	One	215	39.1%
	Two or more	335	60.9%
	Total	550	

**Among the Registered Nurses, there are 2 Nursing Supervisors and 13 Nursing Unit Coordinators.

Table 2: Factor Analysis using Principal Axis Factoring as the extraction method and Varimax with Kaiser Normalization as the Rotation method

Variable	Factor 1	Factor 2	Factor 3
Training			
There are lots of training opportunities provided for me in this hospital	**.860**		
I am satisfied with the training I have received so far	**.845**		
I am happy with the training opportunities provided for me in this hospital	**.829**		
The training I have received so far has helped me be a better nurse	**.788**		
My hospital gives me lots of opportunities to develop my full potential	**.637**		
The hospital places the right amount of emphasis or importance on training	**.598**		
LMX			
My supervisor is satisfied with my work		**.751**	
My supervisor understands my work problems and needs		**.731**	
I have enough confidence in my supervisor that I would defend and justify her/his decision if s/he were not present to do so		**.723**	
My supervisor recognizes my potential		**.707**	
My supervisor is willing to use her/his power to help me solve work problems		**.685**	
I have a good working relationship with my supervisor		**.615**	
Affective Commitment			
I feel strong ties with this hospital			**.786**
I enjoy discussing my hospital with people outside it			**.693**
I feel a strong sense of belonging to this hospital			**.690**
This hospital has a great deal of personal meaning for me			**.688**
I would be very happy to spend the rest of my career with this hospital			**.624**

Table 3. Means, standard deviations and correlations, cronbach's alpha reliability[a]

Variables	Means	SD	1	2	3	4	5
1. Gender (control)	1.89	.34	1				
2. LMX	4.56	.89	.015	1	**(.87)**		
3. Training	3.78	1.2	.048	.363**	1	**(.91)**	
4. Affective Commitment	4.82	.87	.044	.272**	.369**	1	**(.83)**
5. Age (control)	2.22	.743	.91	.076	.052	.033	1

a N=550. Numbers in parentheses on the diagonal are the Cronbach's alpha coefficients of the composite scales.
Statistically significant Pearson correlation scores: **p<0.01, 2-tailed tests.

Table 4. Regression analysis detailing supervisor–nurse relationship as a predictor of training

	Training - Beta scores
LMX	.362**
F	42.04
R^2	.131

**Correlation is significant at the 0.01 level (2-tailed).

Table 5. Regression analysis detailing training as a predictor of commitment

	Commitment - Beta scores
Training	.369**
F	43.39
R^2	.138

**Correlation is significant at the 0.01 level (2-tailed).

Table 6. Regression analysis detailing LMX and training as a predictors of commitment

	Commitment - Beta scores
LMX	.157**
Training	.308**
Gender	.027
Age	.002
F	25.36
R^2	.158

**Correlation is significant at the 0.01 level (2-tailed).

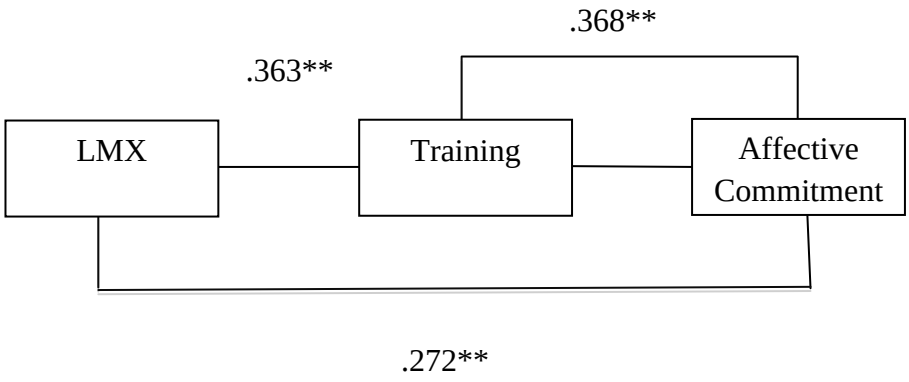

Figure 1: Path analysis: Relationships between supervisor-subordinate relationships (LMX), training and affective commitment.

Goodness of fit overall (R^2=15.5)