

Stress Among Nurses in Rural Hospitals in South Africa

S. N. Madu and J. Mamomane

*Department of Psychology, University of the North, Private Bag X1106, Sovenga 0727, South Africa
Email: madus@unin.unorth.ac.za*

KEY WORDS Stress; nurses; South Africa

ABSTRACT The study examined levels of stress among nurses in two rural hospitals in the Central Region of the Limpopo Province, South Africa. The participants were 80 nurses and 78 clerical staff (as control group). They filled in a questionnaire, which was designed to tap information on symptoms and sources of stress. When compared to the control group, nurses did not report more symptoms of stress than the control group. However, the nurses reported higher levels of work-related sources of stress than the control group. From the findings, it is concluded that although stress management programmes and strategies, which focus more on the reduction of work-related sources of stress should be organised on a regular basis for nurses, the often-reported extra-ordinary levels of stress among nurses may be disputed, especially in relation to general nurses working in rural areas of the Limpopo Province of South Africa.

INTRODUCTION

Problem Statement

Research reports from many parts of the world suggest that nurses suffer from high levels of work-related stress, and that these stress levels jeopardise nurses' health, patients' lives, and undermine the quality, and increasing the cost, of health care (Baguma, 2002; Bennett et al., 2001; Burnard et al., 2000; Callaghan et al., 2000; Pongruengphant and Tyson, 2000; Rout, 2000; Wan, 1996). In South Africa, research among nurses in the Western Cape, Gauteng and KwaZulu Natal Provinces have also noted high levels of stress and burnout among nurses (Basson and van der Merwe, 1994; Mavundla et al., 2001; Ngwezi, 2000; Van Wijk, 1997). No empirical evidence exists to support these claims among nurses in the Limpopo Province of South Africa.

Operational Definitions

The researchers defined stress operationally as respondents' physical and psychological symptoms and health-related and social behaviours attributed to their work experiences.

Literature Review

Stress among nurses is receiving increased attention (Baguma, 2002; Bennett et al., 2001; Burnard et al., 2000; Callaghan et al., 2000; Pongruengphant and Tyson, 2000; Rout, 2000). That nursing is a stressful job has been widely and consistently reported (Hipwell et al., 1989, Plant et al., 1992, Farrington 1995). That stress is linked to disease and illness has also been shown empirically (Norrie, 1995). Stress-related illnesses have been reported to be a serious hazard to the health of nurses; in the first half of the 1990s nurses, midwives and health visitors topped the league table for female suicides in the United Kingdom (UK) (Day, 1995).

Nurses who are stressed are more likely to have more absenteeism (Larson, 1987), have more conflicts with colleagues (MacNeil and Weisz, 1987), experience feelings of inadequacy, and have self-doubt, lowered self-esteem, irritability, depression, somatic disturbance, sleep disorders and burnout, all of which jeopardise the quality of care they provide (Foxall et al., 1990). Nurses who are stressed also report less satisfaction with work (Callaghan and Field, 1991).

Sources of stress for nurses have been described as many and varied and they include the following: too much work overload, poor communication with colleagues, erratic nature of the work and frequent patient deaths (Hipwell, et al., 1989). Also, working against the clock, having no second chance, excessive noise or undue quiet, unpleasant sights and sounds, and sudden swings of activity, were stresses reported by nurses (Farrington, 1995). The fact that nurses (females, mostly) are managing their work role with other social roles such as parent and/or carer also causes them stress and flattens their mood (Shiu, 1998). Another major source of stress for nurses have been reported to be aggression from colleagues (Farrell, 1999).

In the study of Callaghan et al. (2000), the respondents' major sources of stress were related to nursing issues like too much work,

interpersonal relationships, and dealing with hospital administration. Rout (2000) also observed that sources of stress among district nurses in the north-west of England were time pressure, administrative responsibility, having too much to do, factors not under their control, interruptions, keeping up with National Health Service changes, and lack of resources.

The sources of stress among Hong Kong Chinese nurses (Intensive Care Unit nurses) in Lau, Chan, and Chan's (1995) study were inadequate staffing, poor benefits, no opportunity for advancement, poor pay, and working with incompetent staff. There is some research suggesting that intensive care nurses are more stressed than nurses working in other areas (Lau et al., 1995) are. It seems also that the organisational climate (Nicholls et al., 1981) and the context of the job (Harvey, 1992) influence nurses' reports of stress. Taiwanese nurses studied by Tsai (1993) reported similar sources of stress as the nurses studied by Lau et al. (1995), adding 'workload' and 'interpersonal relationships' to the list of work-related stresses that the Hong Kong Chinese nurses reported.

In South Africa, some of the reported sources of stress among (black) nurses are situational factors (work-environment), managerial styles, limited scope for vertical mobility (promotion), poor working conditions (shortage of staff, equipment and medicines, and inadequate interpersonal relationships between doctors or matrons and nursing staff) and poor salaries (Ngwezi, 2000). Other sources (among military nurses) are lack of support from supervisors, high responsibility, long working hours, and task overload (Van Wijk, 1997). However, none of the above studies were conducted among nurses in the rural areas of the Limpopo Province.

The Study Location

The study was conducted in two General Hospitals, which are located in the rural areas of the Central Region of the Limpopo Province of Spout Africa. The Central Region has a total population of 682536 inhabitants. Among them, 94.2% are blacks, 3.8% are Whites, 1.2% are Coloured, 0.3% are Indians/Asians, and 0.4% are unspecified. 47.1% of the total population are males, 52.9% are females. Many of the inhabitants live under poor economic and medical conditions (Statistics South Africa, 2000; Health Systems Trust and Department of Health,

1997). Since no study on stress among nurses working in the rural areas in this region has been reported, the authors of this study, based on literature review on studies from other areas, assume the following about the respondents:

1. Nurses will manifest more symptoms of stress than the control group.
2. Nurses will have more work-related sources of stress than the control group.

METHOD

Participants

Respondents in this study were all the 105 qualified nurses from two public (general) hospitals in the Central Region of the Limpopo Province, who were on morning duty on a Monday morning. The participants in the control group were all the 99 clerical workers (excluding doctors) that are non-nurses who are working in the same hospitals (e.g., clerks and secretaries) at the same time as the nurses. However, only 80 of the nurses and 78 of the control group agreed to participate in the study.

Table 1 shows that the majority of the respondents were females. Over half of the nurses and slightly below half of the control

Table 1: Presents the demographic characteristics of the participants

	<i>Nurses</i>		<i>Control group</i>	
	<i>N = 80</i>	<i>%</i>	<i>N = 78</i>	<i>%</i>
<i>Gender</i>				
Males	19	24.0	16	21
Females	61	76.0	62	79
Total	80	100.0	78	100
<i>Marital Status</i>				
Married	44	55.0	38	48.7
Single	30	38.0	36	46.1
Divorced	4	5.0	3	3.9
Widowed	2	2.0	1	1.3
<i>Age</i>				
18- 34	42	52.5	44	56.4
35 - 44	23	28.8	26	33.3
45 - 60	15	18.7	8	10.3
<i>Race</i>				
Black Africans	72	90.0	73	93.6
Whites	8	10.0	5	6.4
<i>Years of Service in a Hospital</i>				
0-9	49	61.3	44	56.4
10-19	17	21.3	23	29.5
20-29	13	16.3	9	11.5
30+	1	1.3	2	2.6

group were married. The majority (81.3%) of the nurses were aged between 18 and 44 years ($M = 36.84$ years; $SD = 9.17$) and the majority (89.7%) respondents in the control group were aged between 16 and 50 years ($M = 33.38$ years; $SD = 8.85$). The majority of both the nurses (90.0%) and the control group (93.6%) were black Africans while others were Whites. More than halves of both the nurses and the control group have worked in a hospital for between 0 and 10 years.

Instrument

The instrument for the study was made up of two scales:

1. *Symptoms of Stress Questionnaire*: The instrument used to measure symptoms of stress, with a five-point scale and a set of 28 items, was adopted from Smit and Venter (1996) Symptoms of Stress Questionnaire. The instrument is divided into three sub-scales: (a) Mental Symptoms (12 items), ranging from "anxiety" to "feel out of control". (b) Physical Symptoms (13 items), ranging from "headache" to "decreased immunity". (c) Other Symptoms (3 items) which include "increased smoking", "increased alcohol intake" and "increased intake of medication". Respondents were requested to rate each symptom statement on a 5-point scale ranging from "not at all (1)" to "very often (5)". Greater scores on these measures indicate poor health.

2. *Sources of Stress Scale*: The scale for measuring sources of stress, which has a five-point Likert scale and a set of 26 items, was the Source of Stress Scale also developed by Smit and Venter (1996) for use with the South African population. This instrument is divided into four sub-scales: (a) Personal Sphere (7 items), e.g., "I struggle to make decisions". (b) Interpersonal Sphere (5 items), e.g., "I have lost interest in other people". (c) Work Sphere (10 items), e.g., "I feel overloaded at work". (d) Recreational Sphere (4 items), e.g., "I do not have any free time".

The instrument is meant to assess the perceived intensity and frequency of the occurrence of conditions (personal-, interpersonal-, work-, and recreational spheres) that were likely to adversely impact on the well-being of employees who were exposed to them. Respondents indicated whether an item was a source of stress on a 5-point scale ranging from

"not at all (1)" to "very often (5)". In each case, the greater the score the greater the stress due to a particular source.

Psychometric Properties: The Cronbach's Alpha for the Symptom of Stress Questionnaire is 0.81 among the participants and that of the Sources of Stress Questionnaire is 0.79.

Procedure

Pre-test: In a pilot study, the questionnaires were administered to 10 nurses and clerical staff (excluding doctors) in the same hospitals. They had no problem in completing the questionnaires. Those who participated in the pilot study were excluded from the main study.

Main Study: One of the researchers got permission from the hospital superintendents to conduct the research among in the hospitals. On the agreed date for the research, two research assistants trained by the researchers for the administration of the questionnaires went to the hospitals and approached all the nurses and clerical staff who were on morning duty and appealed to them to participate in the study. Those who agreed to participate in the study were given a copy of the questionnaire to complete alone during his or her free time. After lunchtime (i.e., between 13h00 and 14h00) the research assistants went round and collected all the completed questionnaires.

Because of ethical reasons, the contact telephone numbers and addresses of one of the researchers (who is a clinical psychologist and psychotherapist) were given to all the participants, in case the questionnaire aroused some emotions that would call for psychotherapy or counselling. The contact addresses of two other clinical psychologists in private practice were also given to them.

Coding: "Not at all" was coded as 1 and "very often" was coded as 5.

Statistical Method

Descriptive statistics, t-test, and Multiple Analysis of Variance (MANOVA) were used to analyse the results. A statistical software package (SPSS) designed specifically to analyse social science research was used.

RESULTS

The first assumption says that nurses will manifest more symptoms of stress than the control group.

Table 2 presents the total mean scores, standard deviations and t-values of symptoms of stress variables.

Table 2: Means, standard deviations and t-values of the total score on symptoms of stress

<i>Symptom</i>	<i>Group</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Symptoms	Nurses	80	47.37	11.96	-0.32	0.75
	Control	78	46.70	14.59		

An independent two-tailed t-test indicated that the difference did not reach statistical significance ($t = -0.32$, $p = 0.75$) at the 0.05 level. Therefore, the assumption is rejected.

The second assumption is that nurses will have more work-related symptoms of stress than the control group.

Table 2 shows the Multiple Analysis of Variance comparing the scores of the nurses with those of the control group on different sources (spheres) of stress.

The above Table shows that nurses have more work-related stress than the control group ($F=8.43$, $df=1$, $p<0.05$). Therefore the hypothesis is accepted.

DISCUSSION

The result shows that nurses who participated in the study do not have significantly higher stress levels than the control group. This does not agree with other studies conducted in other areas, which indicate that nursing is a stressful job compared to other jobs (Baguma, 2002; Bennett et al., 2001; Burnard et al., 2000; Callaghan et al., 2000; Farrington, 1995; Hipwell et al., 1989; Plant et al., 1992; Pongruen-gphant and Tyson, 2000; Rout, 2000). The above result implies that the often-reported view that nurses have extra-ordinary high levels

of stress may not be generalised to all general nurses, especially those working in the rural areas of the Limpopo Province of South Africa.

The result however revealed that work-related sources of stress are significantly higher among nurses than among their control group. This finding was largely consistent with previous findings (Callaghan et al., 2000; Farrell, 1999; Farrington, 1995; Harvey, 1992; Hipwell et al., 1989; Lau et al., 1995; Ngwezi, 2000; Nicholls et al., 1981; Rout, 2000; Tsai, 1993; van Wyjk, 1997). The implication of the above result is that work-stress-related illnesses may also be common among the nurses who participated in this study (Day, 1995; Norrie, 1995). As other studies have shown, the illnesses would jeopardise nurses' health, patients' lives, and undermine the quality, and increasing the cost, of health care (Baguma, 2002; Bennett et al., 2001; Burnard et al., 2000; Callaghan et al., 2000; Pongruengphant and Tyson, 2000; Rout, 2000; Wan, 1996). The same would lead to absenteeism (Larson, 1987), conflicts with colleagues (MacNeil and Weisz, 1987), dissatisfaction with work (Callghan and Field, 1991), and self-doubt, lowered self-esteem, irritability, depression, somatic disturbance, sleep disorders and burnout, all of which jeopardise the quality of care they provide (Foxall et al., 1990).

Limitations of the Study

Since stress is a complex phenomenon, more instruments could have been used to measure it. Thus, the results of the study should be taken with some caution. Secondly, a cross-sectional study may not adequately capture the dynamic relationship among sources of stress, and outcomes (symptom) variables. A longitudinal

Table 3: Multiple Analysis of Variance comparing the scores of the nurses with those of the control group on different sources (spheres) of stress.

<i>Effect</i>		<i>Multivariate Test</i>				
		<i>Value</i>	<i>F</i>	<i>df</i>	<i>Error df</i>	<i>Sig.</i>
Intercept	Pillai's Trace	0.94	600	4	153	0
<i>Test of Between-Subjects Effects</i>						
<i>Source</i>	<i>Dependent Variables (Sources/Spheres)</i>	<i>Type III Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Corrected Model	Personal	8.71	1	8.71	0.4	0.53
	Interpersonal	2.06	1	2.06	0.07	0.79
	Work	372.12	1	372.12	8.43	0.00
	Recreational	4.5	1	4.5	0.7	0.41

study may be more appropriate. Furthermore, no qualitative method was used in the study. The study did not also go further to identify the coping strategies the nurses are using. The above limitations are recommended for further studies.

CONCLUSION

This study has found that compared to the control group, nurses who participated in this study, on the overall, did not report more symptoms of stress than the control group. However, they reported more work-related sources of stress than the control group. This calls for the organisation of stress management programmes, training on coping skills, and development and implementation of strategies for the improvement of work conditions and environment for nurses in the rural areas, with special focus on reducing work-related sources of stress. Overall, the present study provides a starting point for additional research aimed at gaining a more insight and understanding of the dynamics of stress, among nurses in the rural areas of South Africa.

REFERENCES

- Baguma, P. 2002. Stress and coping among Ugandan nurses. *Journal of Psychology in Africa*, 11(1): 16-37.
- Basson, C. J. and T. van der Merwe. 1994. Occupational stress and coping in a sample of student nurses. *Curationis*, 17(4): 35-43.
- Bennett, P., W., Cardiff, R. Lowe, V. Matthews, M. Dourali and A. Tattersall. 2001. Stress in nurses: Coping, managerial support and work demand. *Stress & Health: Journal of International Society for the Investigation of Stress*, 17(1): 55-63.
- Burnard, P., D. Edwards, A. Fothergill, B. Hannigan and D. Coyle. 2000. Community mental health nurses in Wales: Self-supported stressors and coping strategies. *Journal of Psychiatric & Mental Health Nursing*, 7(6): 523-528.
- Callaghan, P. and M. H. Field. 1991. Organisation and stress among mental nurses. *Nursing Times*, 87, 50.
- Callaghan, P., S. A. Tak-Ying and P. A. Wyatt. 2000. Factors related to stress and coping among Chinese nurses in Hong Kong. *Journal of Advanced Nursing*, 31 (6): 1518-1527.
- Day, M. 1995. Suicide rate in the profession spurs government to act. *Nursing Times*, 91, 7.
- Farrell, G. 1999. Aggression in clinical settings: nurses' views - a follow-up study. *Journal of Advanced Nursing*, 29: 532-541.
- Farrington, A. 1995. Stress and nursing. *British Journal of Nursing*, 4: 574-578.
- Foxall M., L. Zimmerman, R. Standley and B. Bene'. 1990. A comparison of frequency and sources of nursing job stress perceived by intensive care, hospice and medical-surgical nurses. *Journal of Advanced Nursing*, 15: 577-584.
- Harvey, P. 1992. Staff support groups: Are they necessary? *British Journal of Nursing*, 5: 256-268.
- Health Systems Trust and the Department of Health. 1997. *Health Care in the Northern Province*. Durban: Kwik Kopy Printing.
- Hipwell, A., P. Tyler and C. Wilson. 1989. Sources of stress and dissatisfaction among nurses in four hospital environments. *British Journal of Medical Psychology*, 62: 71-79.
- Larson, D. 1987. Interval stressors in nursing; helper secrets. *Journal of Psychosocial Nursing*, 25: 20-27.
- Lau, R., S. Chan and S. Chan. 1995. The stressors of nurses in the intensive care unit in Hong Kong. *Hong Kong Nursing Journal*, 69: 17-24.
- MacNeil, J. M. and G. M. Weisz. 1987. Critical care nursing stress: another look. *Heart and Lung*, 16: 274-277.
- Mavundla, T. R., M. Poggenpoel and A. Gmeiner. 2001. "A model of facilitative communication for the support of general hospital nurses nursing mentally ill people. Part 1: Background, problem statement and research methodology." *Curationis*, 24(1): 7-14.
- Ngwezi, A. A. 2000. Work stress in a group of black nurses. *Dissertation Abstracts International: Section B: The Sciences & Engineering*, 60(8-B): 4242.
- Nicholls, K. A., V. Springford and J. Searl. 1981. An investigation of distress and discontent in various types of nursing. *Journal of Advanced Nursing*, 6: 311-338.
- Norrie, P. 1995. Do intensive care staff suffer more stress than staff in other care environments? *Intensive and Critical Care Nursing*, 11: 293-297.
- Plant, M., M. Plant and J. Foster. 1992. Stress, alcohol, tobacco and illicit drug use amongst nurses, a Scottish study. *Journal of Advanced Nursing*, 17: 1057-1067.
- Pongruengphant, R. and P. D. Tyson. 2000. When nurses cry: Coping with occupational stress in Thailand. *International Journal of Nursing Studies*, 37(6): 535-543.
- Rout, U. R. 2000. Stress amongst district nurses: A preliminary investigation. *Journal of Clinical Nursing*, 9(2): 303-307.
- Shiu, A.T.Y. 1998. Work and family role juggling and mood slate of Hong Kong public health nurses. *Journal of Advanced Nursing*, 28: 203-211.
- Smit, A. and E. Venter. 1996. Life in the pressure cooker. *Productivity SA*, 22(1): 10-12.
- Statistics South Africa. 2000. *Statistics in Brief*. Pretoria: Central Statics.
- Tsai, S. L. 1993. Chinese nurse stress in Taiwan, Republic of China. *Issues in Mental Health Nursing* 14: 275-285.
- Van Wijk, C. 1997. Factors influencing burnout and job stress among military nurses. *Military Medicine*, 162(10): 707-710.
- Wan, M. 1996. Crisis in the wards. *Sunday Morning Post (Agenda)*, 21: 1-2.