STRESS AND COPING STRATEGIES AMONGST REGISTERED NURSES WORKING IN A SOUTH AFRICAN TERTIARY HOSPITAL

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ABSTRACT
STRESS AND COPING STRATEGIES AMONGST REGISTERED NURSES WORKING IN A SOUTH AFRICAN TERTIARY HOSPITAL

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A survey of the literature on nurses reveals that although a great deal of research has been carried out relating to stress and coping internationally, little has been written about nurses in South Africa. The aim of this is to identify the possible causes and frequency of stress experienced by registered nurses working in a hospital, to identify the coping strategies used, to assess the relationship between stress and coping mechanisms of registered nurses, to compare stress and adopted coping strategies among registered nurses in the different units/wards, to identify the support systems that minimize stress and to address stress amongst nurses in South Africa. The study was conducted at Groote Schuur Hospital. A descriptive correlational study was used to identify sources of stress experienced by registered nurses, describing the relationship between stress and coping. With the use of a purposive sampling, 150 standardized self report questionnaires including Nursing Stress Scale and Ways of Coping Checklist was distributed to registered nurses in the following units/wards, medical, surgical, theatre, trauma and emergency, intensive care unit and maternity. A pilot study was conducted to five registered nurses in a psychiatric unit to determine the clarity of questions, effectiveness of instructions, completeness of response sets, time required to complete the questionnaire and success of data collection. Pilot subjects were asked to comment on the applicability and appropriateness of the questionnaire to the South African nursing context. Statistical analysis of the quantitative data was conducted using Statistical Package for the demographic profile of the participants, the frequency of the adopted coping strategies and the mean scores (and standard deviation) of sources of stress. Analytical statistics was used to compare relationship among variables. These included independent Ttest, analysis of variance (ANOVA) and Pearson Correlations. The findings of the study revealed that Registered nurses are stressed. The greatest perceived source of stress appears to be workload followed by emotional issues related to death and dying. Registered nurses seem to be resorting more to positive reappraisal, planful problem solving and seeking social support strategies.

November 2006

KEYWORDS

Stress

Coping strategies

Registered nurses

Tertiary hospital

South Africa

DECLARATION

I declare that Stress and Coping strategies amongst Registered Nurses working in a Tertiary Hospital is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete refences.

Vatiswa Veronica Makie November 2006

Signed …….

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CHAPTER 1

BACKGROUND & OVERVIEW OF RESEARCH

1.1 INTRODUCTION

There is a severe nursing shortage in South Africa. Health Minister Dr Manto Tshabalala-Msimang quoted in the Nursing Update (August 2003), saying there are almost 31,000 vacant nursing posts in this country. She said although there was a general moratorium on filling public service posts, many of these vacant nursing had previously been advertised, but could not been filled due to shortage of nurses.

This shortage of nurses is due to nurses being drawn overseas with promises of more money, better working conditions and greater opportunities, nurses drawn to private health sectors for better salaries, and not enough nurses being trained. To address this shortage a non-pensionable recruitment allowance (for "rural skills", that is, skills which are sometimes difficult to find in rural areas) and retention allowance (for "scarce skills required for specialist skills such as oncology, intensive care and theatre) for certain categories of health workers, including professional nurses, was implemented with effect from July 1, 2004 (backdated with effect from April 2004). While this could assist retention in some critical areas it creates an imbalance across the profession.

Some departments like Intensive care units and Trauma and Emergency units are expected to have the knowledge and skills required to function competently in a high

technology environment, and to utilize critical thinking skills in the planning and implementation of excellent care. Some nurses left in the country lack the experience to take responsibility for these specialized units. The nurse, who lacks the necessary knowledge and practical skills, could find working in these specialized units and environments stressful. In addition, in the last few years, the government has reduced the amount it gives annually to tertiary hospitals, so there is often not enough money to buy or repair equipment. Moreover, basic supplies often run out and cannot be replaced.

The Health Sector Strategic Framework (2000) states that there has been a shift in resources from tertiary care to primary care facilities. With existing plans for new clinics, the country will have almost to 3,000 public sector clinics and this will provide a clinic for every 13,000 population. The challenge is to fully staff and equip these facilities so that they can provide a comprehensive health service and lead to more cost-effective service delivery.

In addition to these challenges, the South African Demographic and Health Survey (SADHS) found that the impact of HIV/AIDS on the health system is significant. In 1999 the number of HIV infections was projected to grow from 3.75 million in 1999 to 5.5 million in 2004. The number of people dying from AIDS was projected to grow from 175,000 in 1999 to 400,000 in 2004. These patients often require care in secondary and tertiary care facilities.

Govender (1995) conducted a research in South Africa investigating the role of perceived sources of stress, perception of work environment, type of hospital ward and nurse rank in

occupational distress, coping and burnout among practising nurses. Govender's (1995) findings suggest that one should identify the frequency of differing types of stressors across ward/unit environments so as to provide explicit answers to the questions of how to decrease stress, burnout and turnover in nursing. Nixon (1995) suggested that future research on coping and burnout should also to delineate the associations between conceptually distinct coping strategies and burnout.

Previous research conducted by Foxall et al (1990:580) has shown stress compromises the quality of care. Nurses who are less stressed, who feel supported by their managers and who feel that they have job security, could save patients' lives and their employers' money. Looking at the current situation in South Africa, with the increasing demands for provision of nursing care and the severe shortage of nurses, there is a need to investigate stress and coping amongst registered nurses in South Africa.

1.2 THE CURRENT STATE OF NURSING IN SOUTH AFRICA

South African nursing is described by various media reports as 'deteriorated', 'sub-standard', 'unpleasant' and even 'life-threatening' (The Star, 31, July 2003 as cited in Nursing Update, June 2004:30-31). Healthcare professionals, and in particular nurses in public-sector hospitals, are reported to work in intolerable and harsh conditions and in environments that are that are unquestionably not conducive to good professional practice and patient care (Nursing Update, June 2004:30-31).

Nurses in public sector hospitals described themselves as everybody's 'punch-bags' (Letter sent to the South African Nursing Council by concerned nurses, December 3, 2003 as cited in Nursing Update, June 2004:30-31). The letter of complaint described the nurses' working conditions as unbearable' and that nurses can no longer 'cope' with the workload. The complaints highlighted the fact the nurses have to be 'Jack of all trades'. Nurse have to do hospital maintenance; including electrician (changing plugs, bulbs, sorting out electricity breakages, fixing telephones); plumber (opening blocked drains); and cleaner (drying floors when floors are flooded by rain, and doing general cleaning); as well as, dispensary clerks (repacking bulk medicines, ordering medication); ambulance drivers and undertakers (using their own cars as hearse); Minister of Religion, Laboratory Technician and Environmental Specialist (Nursing Update, June 2004:30-31).

1.2.1 Nursing Shortage

The exodus of skilled health personnel from South Africa has been substantial as stated in the Nursing Update (May 2005:38). It is estimated that, between 1989 and 1997, nearly 250,000 people left the country for Australia, Canada, New Zealand, United Kingdom and the United States. There are 600 South African doctors registered to practice in New Zealand. Ten percent of Canada's hospital-based physicians, and six percent of the total health workforce in the UK is South African according to Padarath et al (2003:307 as cited in Nursing Update May 2005:38).

The statistics of the South African Nursing Council (SANC) for 2003 (see figure 1) states that the ratio of nurses to population is 1:261. However the SANC statistics do not indicate which portion of the nurses on the register are not working in the country or in

jobs other than direct patient care. A recent study on trends in international migration (OECD, 2004:130 cited in Nursing Update May 2005:38) stated that 35,000 registered nurses in South Africa are either inactive or unemployed.

TABLE 1: Geographical Distribution of the Population of South Africa versus

Nursing Manpower

		Nursing Manpower as at 2003/12/31				**In Training as at 2003/12/3**		
Province	Population 2003	Registered	Enrolled	Auxiliaries	Total	Students	Pupils	Pupil N/A
Limpopo								
Females	2 830 923	6 367	2 583	2 840	11 790	909	174	274
Males	2 582 663	639	365	285	1 289	237	16	37
Total	5 413 586	7 006	2 948	3 125	13 079	1 146	190	311
North West								
Females	1 982 940	5 693	1 877	3 344	10 914	750	3	36
Males	1 809 044	637	182	449	1 268	141	1	15
Total	3 791 984	6 330	2 059	3 793	12 182	891	4	51
Mpumalanga								
Females	1 697 810	4 103	1 707	1 321	7 131	344	103	9
Males	1 548 919	317	166	181	664	55	19	2
Total	3 246 729	4 420	1 873	1 502	7 795	399	122	11
Gauteng								
Females	4 923 500	25 772	7 160	12 830	45 762	2 148	2 300	2 551
Males	4 491 731	1 099	407	930	2 436	346	162	172
Total	9 415 231	26 871	7 567	13 760	48 198	2 494	2 462	2 723
Free State								
Females	1 431 901	6 471	1 041	2 698	10 210	534	106	136
Males	1 306 330	745	247	283	1 275	82	20	37
Total	2 738 231	7 216	1 288	2 981	11 485	616	126	173
KZN								
Females	5 104 329	17 579	9 290	7 607	34 476	1 879	3 518	1 034
Males	4 656 703	764	479	835	2 078	389	475	138
Total	9 761 032	18 343	9 769	8 442	36 554	2 268	3 993	1 172
N-Cape								
Females	428 200	1 735	544	850	3 129	112	0	51
Males	390 648	121	23	62	206	55	0	9
Total	818 848	1 856	567	912	3 335	167	0	60
W-Cape								
Females	2 479 198	12 578	4 013	7 317	23 908	930	322	327
Males	2 261 783	417	173	449	1 039	209	26	29
Total	4 740 981	12 995	4 186	7 766	24 947	1 139	348	356
E-Cape								
Females	3 400 714	11 115	3 227	4 712	19 054	1 870	0	74
Males	3 102 487	563	91	438	1 092	488	0	7
Total	6 503 201	11 678	3 318	5 150	20 146	2 358	0	81
Total								
Females	24 279 515	91 413	31 442	43 519	166 374	9 476	6 526	4 492
Males	22 150 308	5 302	2 133	3 912	11 347	2 002	719	446
Total	46 429 823	96 715	33 575	47 431	177 721	1 1478	7 245	4 938

TABLE 2: Population per Qualified Nurse (in the same province)

Province	Registered	Enrolled	Auxiliaries	Total
Limpopo	773:1	1 836:1	1 732:1	414:1
North West	559:1	1 842:1	1 000:1	311:1
Mpumalanga	735:1	1 733:1	2 162:1	417:1
Gauteng	350:1	1 244:1	684:1	195:1
Free State	379:1	2 126:1	919:1	238:1
KwaZulu-Natal	532:1	999:1	1 156:1	267:1
Northern Cape	441:1	1 444:1	898:1	246:1
Western Cape	365:1	1 133:1	610:1	190:1
Eastern Cape	557:1	1 960:1	1 263:1	323:1
Total	480:1	1 383:1	979:1	261:1

1.2.2 Public health sectors

A Human Science Research Council (HSRC) study published by Hall (2004) used the Department of Labour statistics which indicate that there are 155,000 nurses employed in the country. Only 43% of nurses who are registered with the SA Nursing Council are working in the public sector. According to the PERSAL system, there are approximately 42 000 vacant nursing positions in the public service.

Some of the reasons for leaving the public sector, as stated in the Nursing Update (May 2005:38) are poor working conditions, including high workload, poorly resourced environments; workplace violence and uncompetitive salaries.

1.2.3 Private health sectors

Private health care sector employers also reported registered nurse vacancy rates of between 15 to 20 percent. Reports indicate that both public and private sectors are finding it difficult to fill positions, especially where specialized skills are required (Nursing Updated May 2005:39). A survey done by Zondagh (2004 cited in Nursing Update May 2005:40) in South Africa among registered nurses employed in the private sector provided the following information:

. 72% of the respondents stated that the quality of nursing has declined in the past two years.

. 16% of the respondents indicated that they plan to work overseas within the next two years and another 25% indicated that there is a possibility that they might plan to work overseas within the next two years.

. 77% of the respondents indicated that they have experienced an increase in patient acuity during the past two years.

. 84% of the respondents have indicated that they have experienced an increase in their workload.

. More that half (53%) of the respondents to have experienced an increase of patient adverse incidents during the past two years.

1.3 STATEMENT OF PROBLEM

Stress is recognized as an inherent feature of the work life of nurses, and growing evidence suggest that it may be increasing in severity. Work-related stress has been implicated as a major contributing factor to growing job dissatisfaction, rapid turnover, and high attrition rates among nurses. It was found that job stress impacts not only on nurses' health but also their abilities to cope with job demands. This will seriously impair the provision of quality care and the efficacy of health service delivery (Lee 2003:86).

A survey of the literature on nurses reveal that although a great deal of research has been carried out relating to stress and coping in nurses internationally, little has been written about nurses in South Africa. Given that the international hospital settings and provision of health services are different to those in South Africa, it would not be appropriate to use the results of previous international studies to explain stress and coping amongst South African nurses.

This investigation is aimed to identify causes and frequency of stress, coping strategies used, and support systems amongst registered nurses. Thus knowledge obtained would be useful in the formulation of recommendation to address stress amongst nurses in South Africa.

1.4 PURPOSE OF THE STUDY

This study will seek to extend previous international nursing research by measuring a coping strategies that might be used by South African nurses in dealing with their work stress.

1.5 DEFINITIONS OF CONCEPTS

1.5.1 Coping - managing successfully; be able to deal with difficulty (Oxford advanced learner's dictionary 1991:262).

Coping is viewed as a process determined by cognitive appraisal and is context dependent (Lazarus 1984).

Coping is conceptualized as attempts as to reduce or eliminate the negative effects of stress on well-being (Edwards & Banglion 1993:18)

1.5.2 Coping strategies - managing stress successfully; ways and/or skills one uses to deal with stress, the positive steps that can be taken to minimize or remedy the harmful effects of stress (Thompson, Murphy & Stradling 1994).

1.5.3 Registered nurse – applied to persons registered under section 16 of Act 50 of 1978 and denotes the following:

- a registered general nurse

- a registered psychiatric nurse

- a registered nurse mental health nurse (closed register except for foreign registrations)

- a registered nurse for mental defectives (closed register except for foreign registrations)

- a registered fever nurse (closed register except for foreign registrations)

- a registered sick children's nurse (closed register except for foreign registrations)

- a registered nurse (general, psychiatry, midwifery, community) trained in terms of the regulations published under R2118 of 30 September 1983 and R425 of 22 February 1985

- a registered midwife.

1.5.4 Stress - a condition of physical or mental strain caused by inability to adjust to factors in the environment thus resulting in physiological tension or pressure (Blackwell's dictionary of nursing 1997:641)

Stress is a process of transaction between the person and the environment (Streeten 1995:3)

Stress is a demand made by the internal or the external environment on an organism (such as you and me), that upsets its homeostasis (or equilibrium), restoration of which depends on a non-automatic and not readily available energy-expending action (Antonovosky 1974:15).

Stress is a psychobiological reaction of the body to physical or psychological demands that threaten or challenge the organism's well being (Laposa et al 2003)

1.5.5 Tertiary hospital – tertiary- third in order, rank, importance, etc;

Hospital- institution providing medical and surgical treatment and nursing care for ill or injured people (Oxford advanced learner's dictionary 1991:602&1326).

1.6 OBJECTIVES OF THE STUDY

Objectives of the study are to:

(1) identify the possible causes and frequency of stress experienced by registered nurses working in a tertiary hospital in the Western Cape

(2) identify the frequency of coping strategies used

(3) assess the relationship between frequency of reported stress and coping strategies of registered nurses

(4) compare frequency of reported stress and adopted coping strategies among the registered nurses in the different units/wards

(5) make recommendations to address the occurrence of stress amongst nurses in South Africa

1.7 DESCRIPTION OF STUDY SETTING

The study was conducted in an urban tertiary hospital in the Western Cape which has reached a peak with international acclaim for the world's first successful heart transplant under Professor Christiaan Barnard in 1967. Groote Schuur Hospital has 26 major theatres, 169 different specialized clinics, a 69 bed Intensive Care Unit, as well as Medical and Surgical wards, and a Maternity ward

1.8 CONCLUDING REMARKS

In this chapter an overview of the study was discussed. In the next chapter the literature searched will be outlined. This study will seek to extend previous international nursing stress studies by measuring a wide variety of coping strategies that might be used by South African nurses in dealing with their work stress.

CHAPTER 2

LITERATURE REVIEW

2.1. INTRODUCTION

The literature was reviewed to explore view points in the field of study. The aim of the study seek to extend previous international nursing stress studies by measuring a wide variety of coping strategies that might be used by South African nurses in dealing with their work stress. Both conceptual and research literature was used. Sources of information were books, journals, thesis and dissertation, and on line journals.

2.2. THE CONCEPT OF STRESS

The term stress is an umbrella term for an increasingly wide variety of conditions, responses, and experiences. A fundamental problem for any writer or researcher concerned with stress and its effect on behaviour is to attempt to find a definition (Fisher 1986:7)

2.2.1 Models of stress

There have been a number of attempts to provide a definition of stress; each has its own problems and is inadequate in some respect.

2.2.1.1 Response and Stimulus Based Models of stress

The original view of the physiological response to stress was developed by Seale (1956) and this marked the beginning of a response-based approach to the study of stress (cited in Sutherland & Cooper 1990:13). Kushnir (1986:13) defines stress as an adaptive response that is a consequence of any external action, situation or event that places special physical and or psychological demands upon a person. Laposa et al (2003:24) reiterates that stress is a psychobiological reaction of the body to physical or psychological demands that threaten or challenge the organism's well being. Michelson (1994:18) argues that subsequent thinking around stress acknowledges that psychosocial stimuli are able to produce a stress response.

The stimulus-based approach views stress as an external factor or force, which is disturbing or disruptive to the person (Dohrenwend & Dohrenwend 1978:9). The dominant criticism of this model pertains to its exclusive focus on the properties of the stimulus, hence its inability to account for cognitive and other variables (i.e. coping process) that might mediate the relationship between psychosocial stressors and disorders.

2.2.1.2 Pearson and Environment Based Model of Stress

Streeten (1995:3) defines stress as a process of transaction between the person and the environment. According to Lazarus & Folkman (1984) stress is a dynamic and reciprocal relationship between the person and the environment.

While this author is saying stressors or environmental demands can range from major catastrophes, life events such as death of loved ones or divorce, to daily hassles which encompass those often small but irritating problems that people deal on daily basis such as arguments and working responsibilities. According to this perspective stress is only experienced when situations are appraised as exceeding one's resources, thus being given extra responsibilities at work might be viewed as threatening to one person while another person may appraise the situation as a challenge. Cox (1991:8) viewed stress as a psychological state which is the internal representation of a particular and problematic transaction between the person and the environment.

Antonovosky (1974:15) defined stress as a "demand made by the internal or the external environment on an organism (such as you or me), that upsets its homeostasis (or equilibrium), restoration of which depends on a non-automatic and not readily available energy-expending action". Whether or not a given stimulus or experience means to the individual, as well as on the repertoire of ways that he /she uses in order to cope with such demands.

2.2.2. Additional Conceptualizations of stress

Callaghan et al (2000:1520) defined stress operationally as respondents' physical and psychological symptoms and health related and social behaviours attributed to their work experiences. Sociological models argue for a link between the stressor and the wider social context, according to Turton (1986) especially in terms of the integral involvement of social and psychological stressors, not only as mediators, but in the production of

stress. These models contend that conventional conceptualizations of stress limit the boundaries of stress research to the exclusive study of individuals as isolated units.

2.3. THE CONCEPT OF COPING

How individuals perceive or appraise any specific problem will determine what coping strategies they use. Coping can include attempts at “managing or altering the problem (problem focused coping) or regulating the emotional response to the problem (emotion focused coping) (Lazarus & Folkman 1984). Problem focused coping includes problem-solving activities and seeking information, while emotion-focused coping may include behaviours (seeking others company), and also cognitive activities such as denial of facts to distort reality, or looking on the bright side of things (Payne 1991).

According to Lazarus & Folkman (1984) coping is viewed as a process, determined by cognitive appraisal and is context dependent. According to the transactional perspective, coping is viewed as a ‘process’, determined by cognitive appraisal and is context dependent. Traditional models, however, emphasize traits or styles that operate as stable dispositions to cope in particular ways irrespective of the situations. Yet studies of life stressors by Folkman & Lazarus (1988a) and organizational stressors by Parkes (1986) have found that coping varies the type of stressors and the situation.

2.4. COPING STRATEGIES

Edwards' cybernetic theory of stress, coping, and well-being views stress as a discrepancy between the individual's perceived state and desired, provided the presence of this discrepancy is considered important by the individual. Coping is conceptualized as attempts to reduce or eliminate the negative effects of stress on well-being. Five forms of coping are identified, including attempts to bring the situation into conjunction with desires, adjust desires to meet the situation (i.e. accommodation), reduce the importance associated with the discrepancy (i.e. devaluation), improve well-being directly(i.e. symptom reduction), and direct attention away from the situation (i.e. avoidance).Hence, stress and coping are viewed as critical components of a negative feedback loop, in which stress damages wellbeing and activates coping which may improve well-being directly and indirectly, through the perceived and desired states comprising the discrepancy, the level of importance associated with the discrepancy, and the amount of attention directed towards the discrepancy.(Edwards & Banglion 1993:18-19).

A number of researchers make a distinction between problem-focused and emotion-focused strategies (Callahan 1993:68). According to this author problem-focused strategies, in terms of dealing with organizational change, involve efforts to modify or eliminate the source of stress by dealing with the situation. In their organization, individual employees can seek information by talking to superiors, co-workers or subordinates, by making plans of action, or through bargaining or reaching a compromise to seek a possible solution. Work-related stressors are likely to elicit problem-focused coping because the situation is often appraised as changeable. However, a period of large-

scale organizational change can make some people feel out of control and powerless, so that it would not be usual for some degree of emotion-focused coping by employees. Emotion-focused coping could help people maintain their effective equilibrium as they regulate their feelings about the changes occurring around them (Callahan 1993:68).

Callahan (1993:68-69) states that the coping strategy chosen by individuals is often influenced by their coping resources. According to this author personality variables are internal coping resources, in that various aspects of the self provides workers with personal resources that can help them handle adverse environmental events.

As various researchers note, those with high self-esteem tend to have a history of successfully coping with stress, and with the experience of organizational change. It is quite possible that such people are more likely to have the confidence to deal with negative changes to their work lives. More confident people, who also tend to have levels of higher self-esteem, prefer action, and taking action to cope with organizational change lowers stress reactions, in particular because involvement and action tend to increase feelings of control or mastery. In contrast, individuals who have to cope with organizational change very likely have access to external resources and social supports. It is known that social support networks provide experiences that can bolster the self-esteem of individuals, while the same networks can act as buffers to the levels of psychological distress that can occur during times of crisis for the individual (Callahan 1993:68-89).

Thompson et al (1994) suggested that the effects of stress upon people will be governed not only by the level of pressure experienced, but also by the coping strategies people

subsequently utilize in an attempt to deal with it. Similarly, in order to prevent stress every person develops a repertoire of coping strategies. Coping according to these authors can be seen to occur at four levels by: removing the stressors from their lives, not allowing 'neutral' events to become stressors, developing a proficiency in dealing with situations we do not wish to avoid and seeking diversion from the pressure(s) or by relaxation. These authors also suggested five commonly used coping strategies in their research namely: planning and goal-setting, assertiveness, exercise and diet, stress inoculation and re-evaluation.

2.5. WORKPLACE STRESS

Stress has many different uses, both in public usage and its technical, professional and scholarly usages according to Beehr (1995:1). This author in his research study focus on work-related stress as opposed to life stress or stress in any non-work domain. The terms job stress, work-related stress, occupational stress, and organizational stress are used interchangeably because jobs, work, occupations and organization are indistinguishable concepts.

Work-related stress is estimated to affect at least a third of the workforce in any one year. It costs organizations billions of pounds a year in lost productivity and accounts for over half the working days lost through sickness absence. Stress has been linked to a wide variety of diseases and the European Foundation estimates that lifestyle and stress-related illness accounts for at least half of all premature deaths (Williams and Cooper 2002:1).

Various studies have shown that for those in employment, occupation tends to be the major source of stress (Newton and Keenan 1985). In certain occupations such as the caring professions stress can be seen to be prevalent, endemic and an occupational hazard.

Thompson, Murphy and Stradling (1994) found in their research on stress amongst social workers experiencing high levels of pressure was perceived as part of the job, and part of the organizational culture. Within such helping professions, however, the effects of stress are more marked, with high levels of burnout, and mental health problems being reported. These authors argued that stress is known to affect job satisfaction, performance and productivity. Lower levels of performance and productivity mean that the organization is achieving less than it could if stress levels were lower. This also renders the services provided more expensive than they need to be, thereby giving less value for money for the general public who foot the bill. In addition, absenteeism is a major cost to the employer, and indications are that in many occupations it is becoming a growing problem. Cooper et al (1988) note that, by the 1970's it was recognized that time lost from stress-related illnesses cost Britain far more time than was lost due to work stoppages. Kearns (1986) estimated that 60 percent of absences from work are caused by stress-related illness and that in the UK over 100 million days were lost due to the fact that people could not face going to work. And the effect of absenteeism, of course, a cumulative one as the absence of colleagues places greater work pressures on those who turn up for work.

Various researchers have found that stress can also lead to a staff turnover rate, another high cost that employing organizations have to bear (Jones et al 1991).

2.5.1. Stressors in the workplace

Several researchers have categorized types of job stressors. For example, Cartwright and Cooper (1997) suggested six major sources of pressure at work: stress in the job itself, role based stress, relationships, career development factors, organizational structure and climate, and the work-family interface. Five categories were suggested by Ivancevich and Matteson (1980), three of which focused on social psychological stressors in the workplace. They employed the frequently used organizational psychology categorization by level of thought and inquiry; individual level, group level, and organizational level. While these approaches have taken a fairly broad view, trying to develop categories into which many specific stressors could be placed, Thomson, Murphy and Stradling (1994) have settled for a much narrower set of categories: role overload, role insufficiency, role ambiguity, role boundary (role conflict) and responsibility.

2.5.2. Signs of stress

Signs are the outward manifestation of stress. Williams and Cooper (2002:16-17) listed some of the changes that may indicate that someone is suffering from stress. These authors suggested that this could be a change in appearance, in behaviour and in habits. The following list describes some of the changes that may indicate that someone is suffering from stress as described by (Williams and Cooper 2002:16-17).

Altered appearance

- Lack of care in appearance
- Looks miserable
- Looks tired
- Looks nervous, apprehensive
- Looks agitated

Altered habits

- Eating more, eating less
- Drinking more
- Smoking more
- Increased absence
- More accident prone

Altered behaviour

- Irritability
- Aggression
- Mood swings
- Poor concentration
- Poor decision-making
- Reduced performance

However, Cartwright and Cooper (1997:13-14) suggested two types of symptoms of stress, such as individual and organizational symptoms. These authors argue that raised blood pressure, depressed mood, excessive drinking, irritability, and chest pains are individual symptoms and high absenteeism, high labour turnover, industrial relations difficulties and poor quality control are organizational symptoms encountered in response to stressors (Cartwright and Cooper 1997:13-14).

2.6 STRESS IN NURSES

Stress is recognized as an inherent feature of the work life of nurses, and growing evidence suggest that it may be increasing in severity. Numerous studies have indicated that job stress is significant in nursing. Nurse's high job stress is well documented. In particular, the job stress of nurses working on acute and specialized care units has been widely studied. Heavy workload, poor staffing, dealing with death and dying, inter-staff conflict, strain of shift work, careers, and lack of resources and organizational support have been identified as the major sources of job stress according to Lee (2003:87). It has also been found that different nurses experienced job stress differently. Some studies reported that senior registered nurses and charge nurses experienced a higher degree of stress than other ranks of nurses. However, other studies found that stress level was significantly higher in junior nurses than in senior nurses. There are also studies reporting that the longer the nurses had worked in their units the more likely they were to experience stress, regardless of their seniority (Lee 2003:87).

2.7. INTERNATIONAL NURSING STUDIES ON STRESS AND COPING STRATEGIES

Nursing is, by its very nature, an occupation subject to a high degree of stress.
Every day the nurse confronts stark suffering, grief, and death as few other people do.
Many tasks are mundane and unrewarding. Many are, by normal standards, distasteful,

even disgusting, others are often degrading, some are simply frightening (Hingley 1984:19).

Studies of stress in nurses derived from data collected from a nationwide survey of New Zealand nurses (Dewe,1987) from nurses within Canada (Jamal,1984), the UK (Hingley & Cooper, 1986), the USA (Humphrey,1992) and Thailand (Pongruengphant and Tyson,1997) have identified several common sources of stress. These sources of occupational stress include workload pressures due to insufficient time and resources to complete nurses tasks; pressures due to ambiguity and coping with changing responsibilities; pressures dealing with patients and relatives especially when patients are dying; pressures due to conflicting demands of work and home and finally organizational pressures due to nurses' lack of involvement in planning and decision making (Harris 1989:340).

2.7.1 Exploring sources of stress within clinical settings

Common stressors within the clinical settings were explored; sources of stress as a function of rank, age and years of experience were investigated and stress among nurses in different units/wards were compared.

2.7.1.1 Identifying common sources of stress amongst nurses and across the different types of units/wards

Healy and McKay (2000:681-688) studied stress, coping and job satisfaction in 129 Australian nurses. Each participant was asked to complete standardized questionnaires, including the Nursing Stress Scale, Ways of Coping Questionnaire, the Coping Humour

Scale, Job Satisfaction Scale of the Nurse Stress Index, and the shortened version of the Profile Mood States. Results indicated that 'workload' was the highest perceived stressor in the working environment, which closely agree the findings of Tyler and Cushway (1992, 1995). 'Conflict with other nurses' and 'lack of support' were the least reported stressors.

With regard to the sources of stress, the study conducted by Lee (2003:89) reveals that 'workload', 'inadequate preparation' and lack of support' are the most common stressors among nurses who are working in primary care settings in Hong Kong. These stressors were similar to those identified in previous studies with the exception that 'dealing with death and dying' is obviously a stressor of which primary care nurses have little experience.

The difference may, to certain extent, account for the reported low to moderate frequency of stress among this group of nurses (Lee 2003:89).Even though the differences are not statistically significant according to Lee (2003:89) junior nurses in the study reported more job stress than their senior counterparts. This author argued that the discrepancy could be due to the fact that junior nurses who were deployed to primary care setting were, in general not well prepared for working in those settings. Lee (2003:89) provides evidence that Hong Kong nurses who are working in primary care settings experience only a low to moderate frequency of stress. Such findings provide an interesting contrast to most of the other studies that are conducted in the acute or specialized clinical settings. Viewing this difference in terms of the work context, it is reasonable to conclude that the job nature in the primary care setting seems to be less stressful than in acute setting

Callaghan et al (2000:1526) investigated factors related to stress and coping among one hundred and sixty eight Chinese nurses in Hong Kong. The nurses in the study reported a level of stress below the mean of other workers whose stress was assessed by the same measure. These authors also found that nurses who were stressed were more likely to take sick leave.

Gray-Toft and Anderson (1981a:639-647) in their study of patient-care units including medical, surgical, cardiovascular, surgery, oncology and hospice nursing found that the major sources of stress experienced to be workload, death and dying and feelings of inadequacy in meeting the needs of the patients and their families. Other sources of stress varied as a function of type of a unit. With regard to type of unit the variable 'uncertainty over treatment' was higher on the medical and oncology units but lower in the hospice environment (i.e. palliative care for terminally patients). The authors pointed out that the medical unit included patients with a wide variety of conditions and communicable diseases that requires isolation. Not surprisingly levels of uncertainty were high. In contrast, the hospice unit was a new unit with well trained staff and a high staff-patient ratio.

Regarding studies across general wards, Parkes (1982:790) mentioned that medical wards in comparison to surgical wards had higher levels of distress among nurses, resulting in lower job satisfaction. Ogus (1992:115) argued that this could be due to the fact that medical wards impose greater affective demands on nurses. By comparison, in dealing with younger patients in pre or post-operative stages requiring shorter durations of

treatment, surgical wards provide more opportunities for the acquisition and use of technical skills, hence greater job discretion (Parkes 1982:790-791).

Cronin-Stubbs and Rooks (1985:34-38) studied 296 nurses working on medical units, critical units, in operating rooms, or in psychiatric mental in three hospitals, and investigated stress, social support and burnout, and the relationship between them. These authors found that the staff of the three hospitals differed significantly on the frequency and intensity of occupational stress and burnout. Including the factor of hospital as a block factor in subsequent analysis, according to Cronin-Stubbs et al (1985:38), findings were that: i)lower amounts of positive stress (resulting from positive changes in life) and emotional support were associated with higher degrees of burnout and vice-versa, ii) critical care and medical nurses encountered occupational stressors more frequently and intensely than psychiatric and operating room nurses, iii) critical care nurses experienced significantly more affirmation (i.e. recognition by others and positive feedback on actions) than psychiatric nurses and operating room nurses experienced significantly more (i.e. direct assistance) than psychiatric nurses and iv) no significant difference in burnout were found in the four clinical settings. These authors found that nurses in medical work settings (non-ICU) scored highest in stress; but critical care work settings were more intense than two of the other three specialties (operating room and psychiatric mental health).

Hipwell and Tyler (1989) found little difference between specialized units (coronary care unit and renal unit) and non-specialized units (geriatric ward and general-medical ward) in the degrees of stress experienced. Harris (1986) found minimal difference between ICU

and non-ICU surgical nurses on stress perception and anxiety, except that ICU nurses experienced significantly more job-related sensory deprivation than non-ICU nurses. There were also non significant unit differences. This finding is supported by Leatte and Schneck (1980) who find no difference in levels of stress experienced among nurses across different specialties.

Some of the research on stress in nursing has examined stress in relation to working in intensive care units. Cole et al (2001:282) reported that intensive care units are recognized as most stressful areas both for patients and nursing staff. While this author is saying death and dying are recognized as one source of stress for intensive care nurses. The stress associated with caring for the dying patient may result because 'intensive care units have traditionally focused on providing care to the living, with often dramatic efforts to preserve life'. Intensive care nurses are predominantly socialized into the role as people who maintain and improve the lives of their patients, and stress results when they are unable to meet this expectation.

However, in the study conducted by So & Chan (2004) intensive care nurses, apart from maintaining their efforts to minimize the negative effects of the stressful intensive care environment, needed to equally focus on the patients' psychological needs through measures in re-establishing patients' self-control and minimizing the emotional stress.

In a similar study, Scholey (1983:185) has reviewed findings on stress in critical care nursing. Although these are specialized units, many of the factors found to cause stress in nursing staff in these units will also apply in other nursing settings. Many of the stressors

identified concerned working relationships between nurse and doctor and health care staff, communication and relationships with patient and relatives, the high level of knowledge and skill required the necessity to respond immediately in an emergency, the very high workload and understaffing, lack of support and inability to escape for a break.

While there is some research suggesting that intensive care nurses are more stressed than nurses working in other areas (Lau 1995:18), other studies reported differences between ICU and non-ICU nurses in the reverse direction. Johnson (1979) found anxiety scores to be lower for ICU nurses than for medical nurses but higher for ICU nurses than for psychiatric nurses. Similarly Maloney (1983) found higher levels of anxiety or 30 randomly selected medical and surgical nurses compared to 30 ICU nurses in any army hospital. Kelly and Cross (1985) found that ward nurses in two Australian hospitals were more highly stressed than ICU nurses. In a sample of 103 nurses, general ward nurses perceived all the environmental factors assessed as more stressful than ICU. These ward nurses were found to be more stressed by inadequate staffing and used less problem solving strategies than ICU nurses. These studies indicated that stress was greater for nurses in non-ICU environments.

Comparing medical and surgical floor nurses, Nichols, Springford and Searle (1981) found no difference in frequencies of either positive or negative feelings. Dear et al (1982) reported that both turnover and job satisfaction in two university based hospitals to be similar for ICU and non-ICU nurses. Wakefield et al (1988) support the above finding and state that they contradict the assumption held that ICU nurses express lower job

satisfaction and commitment, have the most negative health and stress feelings, and have higher turnover rates than non-ICU nurses.

Lambert et al (2004:671-684) attempted to cross culturally compare factors that may contribute to the nursing shortage within countries that have produced a limited number of research findings on role stress in nurses. Their research examined work stressors, ways of coping and demographic characteristics as predictors of physical and mental health among hospital from Japan, South Korea, Thailand and the USA (Hawaii). The mean scores for workplace stressor and each way of coping were compared across countries. The findings suggest that nurses in all four countries ranked two workplace stressors (workload and dealing with death and dying) the highest of all workplace stressors (Lambert et al 2004:671-684).

The average physical and mental health scores of the nurses, across countries, were fairly comparable according to Lambert et al (2004:671-684), with the exception of the, with the exception of the average mental score of the Thai nurses. The mental health score of the Thai nurses was much lower that the mental health scores of the nurses from Japan, South Korea and the USA (Hawaii). This finding may be result of contending with potential disharmony between nurses and physicians. As indicated in this study, conflict with physicians was a predictor of lower mental health scores in Thai nurses.

Since the majority of Thai nurses in the study, hold a baccalaureate degree and, thus, have advanced critical thinking and assertiveness skills, conflict may arise between nurses and physicians. As prior research has suggested, high levels, high levels of stress tend to occur

for Thai nurses when they have to work with clinically inexperienced physicians who react to their skills by not demonstrating acceptance and professional respect for their abilities (Lambert et al 2004:671-684).

Lambert et al (2004: 671-684) also found the impact of the frequent rotation in nursing positions was further reflected in the positive correlations found between the likelihood to leave the current nursing position and the workplace stressors, workload, conflict with physicians, conflict with other nurses, lack of support, inadequate preparation and uncertainty about treatment. These findings are similar to those of Baba et al (1999:163:169) who found that work overload, conflict, and lack of social support were predictors of nurses' intentions to leave their current nursing position.

With regard to differences in public hospitals versus private hospitals research support is offered by Tyson and Pongruengphant (2004:254) who reported that there was a significant increase in nurses' workload, involvement with life and death situations, and stress from Thai nurses being required to perform tasks outside of their competence. These authors mentioned that although nurses working in public hospitals generally reported more stress than private hospitals, there have been substantial organizational and economic improvements in the public healthcare sector during the intervening 5 years. While nurses had to cope with heightened occupational stress, contrary to expectations, their job satisfaction increased significantly in both private and public hospitals.

Hospital nurses often rate high workload and dealing with 'death and dying' as their major stressful events (Hipwell et al 1989). According to Tyson and Pongruengphant

(2004:254) the hierarchical structure of the health care profession assumes doctors make decisions about patient treatment while nurses assist patients and provide a supportive role for doctors. In practice, nurses were found to participate overtly in decisions about patient' diagnosis, interventions, and evaluation in specialty hospital settings such as intensive care and emergency units. Due to lack of physician availability or experience, this study has shown that Thai nurses feel substantial stress from being required to perform what they perceive as doctors' functions. In public and private hospitals, stress caused by tasks outside of their competence and associated with the responsibility of practicing without the support of doctors increased substantially during a 5-year period according to these authors.

2.7.1.2 Category of nursing, age and years of experience

Lambert et al (2004:85-97) examined workplace stressors, ways of coping and demographic characteristics as predictors of physical and mental health of Japanese hospital nurses. The findings suggested that the positive correlations existed among age and years worked as a nurse, and years worked on the clinical unit, level of income, and number in the household. As the employed nurse's age increases so does the number of years he/she spends working in nursing and in practicing nursing on a particular clinical unit. In Japan, since the level of one's salary is based upon the number of years as worked rather than the level of the experience or education, age and years as a nurse are much related to income. However, the negative correlation among age and years worked as a nurse, and the likelihood to leave the current nursing position was not surprising. Unlike many western cultures, Japan intentionally rotates, every two to three years, the majority of its hospital nurses. Thus, nurses generally move from one clinical specialty area to

another, even if the nurse has no special education or experience in the new area of clinical focus. However, this often does not apply to nurses who are older and who have worked in nursing for a longer period of time. Older, more experienced nurses are more likely to be allowed to stay in their current nursing position, if desired (Lambert et al 2004:85-97).

The negative correlations found among age and years worked as a nurse, and the workplace stressors of workload, death/dying, inadequate preparation and uncertainty about treatment according to Lambert et al (2004:85-97) were not surprising. In the Japanese nursing culture, the extra workload and the aspects of nursing tend to be relegated, by the older, more experienced nurses, to the newer and younger members of the workforce. By so doing, the older, more experienced nurses do not have to contend with the stressors of workload, death/dying, inadequate preparation or uncertainty about treatment. These stressors are placed upon the younger and newer nurses working within the hospital setting. Being a newly qualified staff nurse, who is younger in age than other staff nurses, was by Charnley (1999:33-36) to be associated with increased role stress.

Of particular interest, according to Lambert et al (2004:85-97) was the positive correlation found between years worked as a nurse and the workplace stressor, lack of social support. One would think that the longer a nurse has worked in the profession, the better his/her chances are of being able to obtain support from other nurses within the workplace. However, it is possible that since nurses who have worked longer in nursing tend to abdicate many of the unpleasant activities associated with nursing care to the less experienced nurses, obtaining support in the workplace does not become a viable option.

The fact that there are few opportunities for promotion and advancement in the Japanese hospital system creates a breeding ground for poor workplace support among nurses.

The positive correlations found among the workplace stressors were most interesting. These findings suggest that as any one of the workplace stressors increased, so did all of the other stressors. The findings according to Lambert et al (2004:85-97) are suggestive of the fact that Japanese hospital nurses do have workplace stressors.

Hartrick and Hills (1993) interviewed 28 nurses to determine their perception of stressors in the workplace and found that workload and interpersonal relations with other members of the health care team ranked high as stressors. In this study it was noted that stressors and support needs may be unique for each staff nurse (Hartrick et al 1993:30).

Nichols et al (1981:315) also found criticism of the level and adequacy of support and the lack of feedback from senior nursing staff. In the area of psychiatric nursing there is a dearth of research-based literature on stress, although Dawkins et al (1985:10-11) reviews much of the work that is available. From the descriptive writing available, two major sources of stress were identified, patient contact, and administrative and organizational factors which cause most stress in psychiatric nursing.

2.7.2 Efficacy of various coping strategies utilized by nurses

It was found that more than half of the respondents adopt direct action strategies as the coping behaviour to deal with stress, of which ‘be as organized as possible’ and ‘attend to important matters’ are frequently used. This finding contradicts other studies, which have

identified that nurses' predominant coping strategies in dealing with job stress are palliative in nature, including such measures as 'avoidance' , 'smoking' and 'alcohol'. It seems that Hong Kong primary care nurses are constructive in confronting job stress. However, it has to be noted that most previous studies were conducted in acute and specialized care settings.

With regard to the relationship between job stress, coping and perceived health status, the findings of the study by Lee (2003:89-90) revealed a significant inverse relationship between direct coping strategies and job stress, and a positive relation between perceived health status and coping. These findings concur with previous studies indicating that the better use of coping strategies, the less job stress experienced and, most importantly, the better the perceived status(Lee 2003:89-90).

According to Lambert et al (2004:85-97) accepting responsibility and escape-avoidance were the two coping mechanisms found to be positively correlated with the likelihood of leaving the current nursing position. Thus, nurses who indicated that they were likely to change nursing positions found that accepting responsibility and escape-avoidance were their best means of coping.

Given the fact that accepting responsibility and escape avoidance are opposing ways of coping with a stressful event, one has to question whether Japanese nurses perceive accepting responsibility and escape-avoidance in the same manner as nurses from the western cultures. Prior research conducted on nurses from Western cultures suggests that escape-avoidance coping methods are not effective in contending with stressful events

and, as a result, could contribute to a nurse's desire to leave his or her current nursing position (Tyler and Cushway 1991:81-91).

The negative correlations found between age and years worked as a nurse, and the coping mechanisms of seeking social support, accepting responsibility and escape avoidance suggests that as nurses' age and work longer in nursing, they are less likely to use such coping mechanisms. Since Japanese nurses remain highly dominated and influenced by medicine, and function more ac hand-maidens for physicians rather than as independent practitioners of nursing, it is possible that the longer a nurse works in a Japanese hospital the more likely he/she is to abdicate the professional aspects of nursing and to stop attempting to cope by using these mechanisms (Lambert et al 2004:85-97).

Based on the findings of the study conducted by Lambert et al (2004) who state that, regardless of country, it is interesting to note that self-control; seeking social support; planful problem solving and positive reappraisal were found to be the four most utilized ways of coping. This is supported by Tyson and Pongruengphant (2004:254-255) who indicate that nurses in Thailand's hospitals continue to experience high levels of stress from a lack of adequate support or opportunities to participate in making decisions directly affecting their patients.

With increasing level of stress, Thai nurses more frequently utilized problem solving, Buddhist relaxation techniques, and avoidance as strategies for dealing with the pressures of workload, role ambiguity, and other sources of stress. Nurses in Singapore according to Boey et al (1998) preferred self-help coping strategies to seeking social support from

colleagues or management. If the problem situation can be kept from being known by others by relying on personal resources, strategies such as relaxation and avoidance protect nurses under stress.

Bowman and Stern (1995) studied stress and coping in 187 urban nurses with an average age of 35 years. Each participant was asked to describe two stressful events at work. The nurses were then asked to outline which coping strategies were used to deal with these stressful events. The work by Bowman and Stern (1995) provides evidence to support the concept that coping successfully with work related stressors depends on the situation, the appraised level of control and which coping techniques were used to handle the stressful situation.

Parkes (1986:1279-1290) studied 135 first year urban nursing students. Individual differences, environmental factors and situational characteristics of the stressful event were the variables examined as predictors coping. The purpose of the study was to examine the role played by these variables and to see to what extent they predicted outcomes of coping. Knowledge about stressful episodes during the clinical work was collected via the Ways of Coping questionnaire (Lazarus and Folkman 1984) and interviewed at the end of each work experience. Parkes (1986:1279-1290) indicated that situational, personal and environmental variables were direct predictors of coping. Parkes (1986:1279-1290) argued that stress and coping are not a simple cause-effect relationship but a complex interactive relationship that includes other variables such as support. In addition to the argument McIntosh (1991:216) surveyed social support in nurses working in a major general hospital and reported that the greatest effects on stress by social

supporters; occurred when there were “too few and too many people willing to provide support may increase the strain”.

2.8. STRESS AND COPING STRATEGIES AMONGST SOUTH AFRICAN NURSES

Very little has been documented in South Africa regarding the stress and coping strategies amongst registered nurses. It may for example, be assumed that because stress and coping has been studied extensively internationally, those findings could not be relevant to nurses in South Africa. Given the fact that the international hospital settings and provision of health services are different to those in South Africa, it might not be appropriate to use the results of previous international studies to explain stress and coping amongst South African nurses.

Matlakala (2002:100) explored and described the personal and clinical experience of 110 nurses in South Africa and other countries like Malawi, Lesotho and Swaziland who registered for and those who completed the Diploma in Critical Care Nursing since 1998. A questionnaire developed by the researcher with the help of a statistician was used to collect data. In the findings of the study, the researcher indicated that post basic critical care students, although they are registered nurses, experienced a variety of problems such as stress and shock during their placement. Positive experiences included rotation to different hospitals, exposure to different ways of managing of patients, exposure to different types of equipment to provide nursing care and being able to correlate theory

with practice. The negative experiences as stated by this author included shortage of staff which led to misuse of the students and not meeting their learning objectives, exhaustion from work and travelling, exploitation by permanent staff, shortage of equipment and supplies in some hospitals, poor accompaniment due to lack of preceptors or preceptors allocated to patients and not able to attend to students, and staff's negative attitudes towards students.

Govender (1995:117-136) investigated the role of perceived sources of stress, perception of work environment, type of hospital ward and nurse rank in occupational distress, coping and burnout among practicing nurses at local general hospital in Pietermaritzburg. Data were collected with the Nursing Stress Scale (NSS), Maslach Burnout Inventory (MBI) the Brief Symptom Inventory (BSI), Ways of Coping Checklist (WCCN) and the Work Environment Scale. Stress response in her study was measured specifically in terms of clinical distress and burnout. This author suggested that workload was identified as the greatest perceived source of stress. Comparison of perceived stressor types particular to the profession as a function of a unit indicated the coronary care unit perceived higher levels of workload as compared to intensive care unit nurses. It was suggested that this was possibly due to a qualitative workload overload as opposed to a quantitative one.

The second major perceived source of stress was emotional issues related to death and dying. This was higher in casualty, a trauma unit. The theatre unit subjects, with frequently low death and short contact with patients and their families perceived emotional issues related to death and dying to be a minor stressor source. Surgical ward

nurses experienced high levels of distress and burnout as compared to medical ward nurses (Govender 1995:117-136).

Govender (1995:133) stated that comparative studies between hospital units did not confirm that one type of unit is more stressful than another. Govender's (1995:133) study provided evidence that non specialized general ward environments are equally stressful in comparison to the specialized critical care units. However, these findings suggest that one should identify the frequency of different types of stressors across wards/units so as to make recommendations to address stress amongst nurses in South Africa and decrease turnover.

2.9. MEASURING STRESS

This section reviews instruments available in the current literature for measuring stress, particularly in nurses.

Gray-Toft and Anderson (1981a,b) surveyed stress in 122 nurses working in five acute care nursing units in a major urban hospital. Three major sources of stress identified were: workload / overload, feeling inadequately prepared to meet patients' emotional needs and death and dying. One purpose of this study was to develop a stress scale specific to nurses (NSS).The Nursing Stress Scale (NSS) (Gray-Toft & Anderson 1981) which has 34 items about potential stressful situations which require Likert type responses from 0 'Never' to 3 'Very frequently' according to their perceived occurrence in the workplace. Higher scores on the NSS indicate more frequently experienced stress. Graft-Toft & Anderson

(1981) reported internal consistency coefficients ranging from 0.79 to 0.89. It was noted that the stress of work demands was from two separate sources, the hospital administration and the physician.

Seven dimensions of job stress were measured with the 50 items of Nursing Stress Questionnaire by Schmitz, Neumann and Roman (2000:97). The Nursing Stress Questionnaire focused on situation that emerged as frequent and severe sources of work stress in a clinical setting. Each item of the instrument was on a five-point scale, ranging from ‘not all (1) to ‘extremely’ (5). Subsequently the answers are combined in seven work-related stress dimensions: Patients, Team Members, Physicians, Work Overload, Leadership, Lack of Independence and Insecurity.

Six dimensions of stress were measured with 30 items of Nurse Stress Index by Tyson et al (2002:455). The Nurse Index rates potential stressor on a six-point scale with (0) ‘no pressure’, (1) ‘very little’, (2) ‘small pressure’, (3) ‘moderate pressure’, (4) ‘high pressure’ and (5) ‘extreme pressure’. The subscales were workload pressures related to insufficient time, workload pressures due to resources and conflicting priorities, Confidence and Competence in Role, Dealing with Patients and Relatives, Home and Work Conflicts and Organizational Support and Involvement.

A questionnaire which has been developed following a literature review to determine which variables influenced job stress scores of physicians and nurses working with cancer patients was used as a primary data collection tool by Isikhan et al (2004:238). Lack of appreciation by superiors, unfairness in opportunities for promotion, imbalance between

job and authority, conflicts with colleagues, responsibilities of role, long and tiring working hours, lack of necessary equipment, not having enough time for family and social life, and problems experienced with patients and their relatives caused a statistically significant increase in the job stress scores of health care professionals ($P<0.05$).

Another instrument was the Job Stress Inventory, which aimed to determine the stress levels of health care professionals. This inventory had been used previously by Haynes (1994) with men and women working in the National Health Statistics Centre.

Burnout can be assessed by the 22-item Maslach Burnout Inventory (MBI), which contains three subscales: Emotional Exhaustion (having no capacity left to offer psychological support to others), Depersonalization (a negative and callous attitude to colleagues and patients), and Personal Accomplishment (playing down or disregarding positive job performance and past achievements). Scores on the MBI items range from 0 (never) to 6 (always). A high degree of burnout is reflected by high scores on the Emotional Exhaustion and Depersonalization subscales and by low scores on the Personal Accomplishment subscale (Schmitz et al 2002:95).

2.10 CONCLUDING REMARKS

A survey of the literature on nurses reveal that although a great deal of research has been carried out relating to stress and coping in nurses internationally, little has been written about nurses in South Africa. Looking at the current situation in South Africa, severe nursing shortage, there is a need to conduct this study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In this chapter the methodology, including research design, population and sample, data collection and data analysis process are outlined. Methodology is the total strategy for the study and it starts from the identification of the problem to the final plans of for the data collection (Uys & Basson 1991:37-38).

3.2 OBJECTIVES OF THE STUDY

The objectives of the study are to:

(1) identify the possible causes and frequency of stress experienced by registered nurses working in a tertiary hospital

(2) identify the coping strategies used

(3) assess the relationship between stress and coping strategies of registered nurses

(4) compare stress and adopted coping strategies among the registered nurses in the different units/wards

(5) make recommendations to address stress amongst nurses in South Africa

3.3 RESEARCH DESIGN

A quantitative, descriptive correlational survey was used. The aim of the study seeks to extend previous international studies by measuring a wide variety of coping strategies that might be used by South African nurses in dealing with their work stress.

A research design is a blueprint for conducting the study that maximizes control over factors that could interfere with the validity of the findings (Burns& Grove 2001:223). This author states that research design guides the researcher in planning and implementing the study in a way that is most likely to achieve the intended goal.

According to Polit & Hungler (1995:193), research design is the overall plan for obtaining answers to the research questions or for testing the hypothesis and Uys and Basson (1991:37-38), stated that it is the structural framework within which the study is implemented. In this study the sources of stress experienced by registered nurses were identified and the relationship between stress, coping and turnover was described.

3.3.1 Quantitative research

Polit & Hungler (1995:15) defines quantitative research as a systematic collection of numerical information and analysis of that information using statistical procedures. This is supported by Kennedy (1998:1) stating that a quantitative design is used when data is measured in numbers. Quantitative research was used because the study consisted of a larger number of subjects, who were scattered in the different units/wards and a survey method was found to be the relevant to use. Descriptive statistics was used to describe and

summarize the data obtained from the respondents. Seaman (1987:174) supported this by stating that quantitative design is used to count and measure data including counting frequencies, use of percentages and averages.

3.3.2 Descriptive research

According to Burns and Grove (2001:30,52), descriptive research provides an accurate portrayal or account of characteristics of a particular individual, situation or group for the purpose of discovering new meaning, describing what exists, determining the frequency with which something occurs and categorizing information. These authors state that the purpose of descriptive research is the exploration and description of the phenomenon in real-life situation. This approach is used to generate new knowledge about concepts or topics about which limited or no research has been conducted. Through descriptive research, concepts are described and relationships are identified that provide a basis for further quantitative research and theory testing. In this study the registered nurses were requested to describe their experiences of stress and coping strategies in their work environment.

3.3.3 Correlational research

Correlational research is conducted to examine linear relationship between two or more variables and to determine the type and degree of relationship (Burns and Grove 2001:30). The primary intent of correlational studies according to these authors is to explain the nature of relationships, not to determine the cause and effect. In this study the relationship between stress, coping and turnover was examined.

3.3.4 Survey

Uys and Basson (1991:47), state that survey research is an empirical and logical investigation that involves the systematic and impartial collection of data from a sample of cases, as well as the statistical analysis of the findings. According to Burns and Grove (2001:256) a survey is a technique of data collection in which questionnaires (collected by mail or in person) are used to gather information about an identified population. It is used to collect data that can be collected through self-report. There is no manipulation of variables or an attempt to establish causality. This is supported by Seaman (1987:214) who mentioned that in a survey, standardized information is collected from subjects from a larger population of more than one hundred. For the purpose of this study the researcher identified sources of stress experienced by registered nurses, described the relationship between stress, coping.

3.3.4.1 Motivation for the use of the survey

A descriptive correlational survey was used. The respondents were scattered in all units/wards already stated at Groote Schuur Hospital. Because of the nature of work of the subjects (shortage of staff, working shifts day and night, the ward almost always busy, limited time to conduct interviews) it made it difficult to conduct face interviews and a questionnaire was ideal as the respondents used their own time and pace to complete the questionnaire.

Uys and Basson (1991:65) states that the questionnaire is less expensive, time consuming and has an advantage of involving a large number of subjects. Babbie (1992:8) supports

the choice of the questionnaire stating that the central element in survey research is the standardized questionnaire.

3.4 THE TARGET POPULATION

The target population is all elements (individuals, objects, or substances) that meet certain criteria for inclusion in a given universe (Burns and Grove 2001:47).

This is supported by Polit and Hungler (1995:33), who states that the target population included all the members who are under study that conforms to a designated set of specifications. In this study the population consisted of registered nurses in any of the following units/wards: medical, surgical, critical care, trauma and emergency, maternity and theatre at Groote Schuur Hospital.

3.5 SAMPLE AND SAMPLING METHOD

A purposive, non-probability sampling method was used to select the sampled nursing units within the hospital under study. Uys and Basson (1991:89) define the sample as the number of units of the population under study and should represent the characteristics of the population being studied. Polit and Hungler (1995:646,652) stated that sampling is the process of selecting a portion of the population to represent the entire population and non-probability sampling is the selection of subjects from a population using non-random

procedures. Non probability sampling was used as within the selected units all nurses working in those units were approached for participation in the study.

Brink(1996:141) describe purposive sampling, sometimes called judgmental or theoretical sampling as a sampling method based on the judgment of a researcher regarding subjects or objects that are typical or representative of the phenomenon being studied, or who are knowledgeable about the question at issue. On the other hand Uys and Basson (1991:93) state that purposive sampling involves the conscious or subjective selection of the subjects by the researcher.

This argument is supported by Polit and Hugler (1995:235) stating that purposive sampling is based on the belief that the researcher's knowledge about the population can be used to handpick the subjects to be included in the sample. In this study the subjects of the population, were the registered nurses from the six units/wards already mentioned at a tertiary hospital in Cape Town.

Purposive sampling of the nursing units was seen as acceptable in this study, in that the researcher knew the population elements of the selected nursing units. All nurses working in the selected units were approached and requested to participate in the study. The method was also found to be convenient and economical.

3.5.1 The sample size

Sample size is the number of subjects needed in a sample (Polit and Hungler 1995:241). The population from which the subject sample was taken were registered nurses from six

units/wards already mentioned. At Groote Schuur Hospital, there are 788 registered nurses working in various departments. The sample consisted of one hundred and fifty (150) nurses working in the nursing units selected for this study on the days the study was conducted who were sent the questionnaires to complete.

3.5.2 Questionnaire response rate

Hundred and fifty (150) questionnaires were distributed to the respondents and eighty four (84) were received back from the respondents. This means that 56% of the questionnaires were returned. This according to Seaberg (1998:254) is adequate as 10% of the sample should be sufficient to control the sampling error. Sampling error according to Polit and Hungler (1993:285,446), is the fluctuation of the value of a statistic from one sample to another drawn from the same population. See Table 1.

The majority of the sample was from Trauma and Emergency (21.4%) and Surgical wards (21.4%). The medical wards accounted for (16.7%); Intensive care units accounted for (15.4%); theatre accounted for (14.2%) of the response. Maternity wards accounted for only (10%) of the sample response.

Table 1: Response rate according to type of unit/ward.

Type of ward/unit	Response number	Response percentage
Trauma and Emergency	18	21.4
Intensive care units	13	15.5
Maternity ward	9	10.7
Theatre	12	14.3
Surgical wards	18	21.4
Medical	14	16.7
TOTAL	84	100

3.6 DOCUMENT REVIEW

As a more objective indicator of workload, statistics were obtained regarding the average bed occupancy percentage (i.e. intensive care units, medical, surgical, maternity, trauma and emergency and theatre) for different units over the month period in which this study was conducted. These statistics were provided by the Deputy Director.

3.7 STUDY QUESTIONNAIRE

Questionnaire according to Polit and Hungler (1993:444) is a series of questions in a document used to gather self-report information from respondents through self administration. The purpose of the questionnaire was to extract information from the respondents with regard to the objectives already stated.

Researchers are encouraged to use questions in exactly the same as those in previous studies to facilitate comparison of results between studies according to Burns and Grove (2001:427-428). These authors argue that, for some studies, the researcher can find a questionnaire in the literature that matches the questionnaire blueprint that has been developed for the study. However the researcher must frequently add items to or delete items from an existing questionnaire to accommodate the blueprint developed.

A questionnaire, (Appendix A), which consisted of three sections, was used to solicit information regarding sources of stress and the adopted coping strategies of registered nurses working in a hospital setting. The first section attempted to delineate nurses' demographic profile, such as age, rank, work area and years of experience.

3.7.1 The Nursing Stress Scale

The second section, modified from the Nursing Stress Scale (NSS) which was designed to measure the frequency and sources of nursing stress experienced by nurses on different hospital units (Graft-Toft & Anderson 1981). It consists of 34 items that describe situations that have been identified as causing stress for nurses in their performance of

their duties which require Likert type response from 0 ‘Never’ to 3 ‘Very frequently’ according to their perceived occurrence in the workplace.

3.7.1.1 The subscales

The Nursing Stress Scale identifies seven major sources of stress which are factor analyzed. One factor relates to the physical environment; four factors arise from the psychological environment and two from the social environment of the hospital. The workload subscale relates the physical environment. Death and dying; inadequately preparation to deal with the emotional needs of patients and their families; lack of staff support and uncertainty concerning treatment relate to the psychological environment. The social environment subscales consist of conflict with physicians and conflict with other nurses and supervisors.

The Nursing Stress Scale will guide the study to achieve the objective 1, and 3 to 5. Two of my own questions are question 19 and 31. Looking at the lack or availability of any support systems in the hospital will guide the study to achieve objective 5.Looking at the issue of the scarce skill allowance, while this could assist retention in some critical areas it creates an imbalance across the profession will guide the study to achieve objective 2 to 5.

(1) Death and dying (7 items) questions 1 - 7

These subscale measures stressful situations resulting from the suffering and death of patients. Four of the seven items on this subscale are related to the death of a patient. Two other items on this subscale are related to patients who fail to improve or suffer and one

item is related to the performance of painful procedures. For example: The death of a patient with whom you developed a close relationship.

(2) Conflict with Doctors/Physicians (5 items) questions 8 - 12

The second subscale consists of stressful situations that arise from the nurses' interactions with doctors/physicians. Two items include criticism by the doctors by the doctor and conflict with the doctor. The other items pertain to the nurse's fear of making mistakes concerning treatment in the absence of a doctor and disagreement with the doctor. For example: Disagreement concerning the treatment of a patient.

(3) Inadequate preparation to deal with the emotional needs of patients and their families (5 items) questions 13 - 15

This subscale measures stressful situations resulting from nurses feeling inadequately prepared to deal with psychological and emotional needs of patients and their families. For example: Feeling inadequately prepared to help with the emotional needs of a patient.

(4) Lack of support (3 items) questions 16 - 18

This subscale measures the nurse's assessment of the extent to which opportunities are available to share experiences with other nurses and to vent feelings of anger and frustration. For example: Lack of opportunity to talk openly with other unit personnel about problems in the unit.

(5) Conflict with other nurses and supervisors (5 items) questions 20 - 24

The fifth subscale consists of items that are associated with conflict situations that arise between nurses and supervisors. Two items involve conflict with or criticism by a supervisor and the other three items have to do with conflict with nurses on the same or other hospital units. For example: Difficulty in working with a particular nurse or nurses in the unit.

(6) Workload (6 items) questions 25 - 30

This subscale includes stressful situations that arise from the nurse's workload, staffing and scheduling problems, and inadequate time to complete nursing tasks and to support patients emotionally. For example: Too many non-nursing tasks required, such as clerical work.

(7) Uncertainty concerning treatment (5 items) questions 32 – 36

Stressful situations also arise where there is uncertainty concerning the treatment of patients. For example: Inadequate information from a physician regarding the medical condition of a patient.

3.7.1.2 Rating system

Likert type responses from 0 'Never' to 3 'Very frequently' according to their perceived occurrence in the workplace.

3.7.2 The Ways of Coping Checklist

The last section, the Ways of Coping Checklist (WCCL) is based on Lazarus' transactional model of stress and coping (Lazarus & Folkman 1984). This model views stress as a relationship between the person and the environment that taxes or exceeds the person's resources and endangers his or her well-being. Two basic categories of coping include efforts to alter the troubled person-environment relationship (i.e. problem-focused coping) and efforts to regulate emotional distress (i.e. emotion-focused coping). Problem-focused coping includes defining the problem, generating, evaluating, and selecting potential solutions, and attempting to cognitively reappraise the situation by shifting level of aspiration, reducing ego involvement, finding alternative channels of gratification, or developing new standards of distancing, self-deception, positive comparisons and reality distortion.

3.7.2.1 The sub-scales

The are eight sub sub-scales: planful problem solving, question 75 - 80; seeking social support, question 57 – 62; self-controlling, question 50 – 56; positive re appraisal, question 81 – 87; confronting coping, question 37 – 42; distancing, question 43 – 48; accepting responsibility, question 63 - 66 and escape-avoidance, question 67 – 74..

3.7.2.2 The rating format

This questionnaire contains 50 items drawn from the existing measures and one of my own which is question 49. A four-point response scale was used from 0 'Not used' to 3 'Used a great deal'.

3.7.3 Pilot study

A pilot study was used to test the instrument. Burns and Grove (2001:49-50) defines pilot study as a smaller version of a proposed study conducted to refine the methodology. It is developed much like the proposed study, using similar subjects, the same settings, the same treatment, the same data collection and analysis techniques.

A pilot study was conducted with five registered nurses in a psychiatric unit to determine the clarity of questions, effectiveness of instructions, completeness of response sets, time required to complete the questionnaire and success of data collection technique. Pilot subjects were asked to comment on the applicability and appropriateness (validity) of the questionnaire to the South African context.

No informed changes in the numbering and sequencing of the questions before the main data collection. All questions were answered, no clarity of questions were required. The researcher determined that it would take twenty (20) minutes to complete the questionnaire. The instrument was also tested for reliability and validity to minimize bias.

3.7.4 Reliability and validity

Reliability according to Uys and Basson (1991:75-76) mean the degree of consistency or accuracy with which an instrument measures the attribute it is designed to measure. Because all measurement techniques contain some error, reliability exists in degrees and is usually expressed as a form of correlation coefficient. Gray-Toft (1981) reported internal consistency coefficient ranging from 0.79 to 0.89 on the Nurses Stress Scale.

Folkman et al (1988b) reported internal consistency coefficient of 0.61 to 0.79 on the ways of Coping Checklist. The researcher tested the study for virtual replicability (repeatability) of the research and the results by other researchers. This was done through a pilot study that was conducted to test the questionnaire using nurses from the Psychiatric unit who were not to participate in the main study. There were no changes indicated after the pilot study.

Validity on the other hand, means the degree to which an instrument measures what it is supposed to measure (Uys and Basson 1991:80). With regard to validity, the Nurses Stress Scale and Ways of Coping Checklist are established tools that have been validated (Gray-Toft 1981; Edwards & Baglion 1993; Folkman 1988b). The questionnaire was circulated to several South African Nursing Tutors and Nursing Managers for comment on face validity of the questionnaire in a South African context and was found to be acceptable.

3.8 ETHICAL CONSIDERATIONS

The research protocol was authorized by the University of the Western Cape Higher Degree Committee.

Permission to conduct the study was requested. Letters clearly stating the purpose of the study were written to hospital ethics committee and to the Deputy Director: Nursing at Groote Schuur Hospital requesting permission to conduct the study.

Verbal consent Registered nurses were invited to participate voluntarily in this study by verbal consent. Return of the completed questionnaires implied that the respondents had consented for the study. Participants were ensured not to feel obliged to complete the questionnaire and that they might withdraw from the study at any point in time if they so wished.

Confidentiality All information was treated with strict confidentiality and used only for research purpose.

Anonymity was ensured. The questionnaire required no names of respondents. Participants were asked to complete the questionnaire anonymously and to place the place the completed questionnaire in a sealed plain white envelope provided for return to the researcher and drop them in the available box. Participants were instructed that if they did not wish to participate to place the blank uncompleted questionnaire also in the envelope and return to the researcher.

3.9 DATA COLLECTION PROCEDURE

In this study the researcher used a questionnaire to collect the data. Questionnaires were distributed to registered nurses of six units/wards (already mentioned). The questionnaires were distributed at the beginning of the shift and collected at the end of the same nursing shift. This was done for alternate days and on different nursing shifts until the desired

sample was reached. Phone calls were made during the shifts to remind the subjects to return the completed questionnaires.

3.10 DATA ANALYSIS

The questionnaires was checked for missing data; items in which the subject provided two responses when only one was requested; items in which the subject has marked a response between two options and items that ask the subject to write in some information such as rank, work area and years of experience.

Data was entered into an Excel Spread sheet. A 10% random sample of questionnaires was checked against the data entered. Statistical analysis of the quantitative data was conducted using Statistical Package for the Social Sciences (SPSS). Descriptive statistics was used to illustrate the demographic profile of the participants, the frequency, the mean scores and standard deviation of sources of stress and adopted coping strategies. Analytical statistics was used to compare relationship among variables which include independent t-test, analysis of variance (ANOVA), post hoc multiple comparisons analyses (tukey) and Pearson correlations. Statistical treatment of the data included correlations of variables with each other. Due to complexity and the dynamic nature of the stress system one would expect a high degree of interdependency between different factors. Correlational analyses allow one to examine the extent of the interrelatedness of variables, such as sources of stress and ways of coping, as suggested by Govender 1995; Healy & Mc Kay 2000 and Lee 2003.

3.11 CONCLUDING REMARKS

A detailed description of the analysis and interpretation of data analysis will be discussed in the next chapter.

CHAPTER 4

RESULTS

4.1 INTRODUCTION

In this chapter a detailed description of the analysis and interpretation of data is outlined. All statistics were calculated using the Statistical Package for Social Sciences (SPSS). Descriptive data together with, significant and non significant findings of independent T test, analysis of variance (ANOVA), and Pearson correlations have been reported.

4.2 DEMOGRAPHIC INFORMATION

Analysis of demographic data of the respondents included age, rank, work area and years of experience. Descriptive statistics were used to describe and synthesize data. According to Polit and Hungler (1993:239-321), descriptive statistics are useful in analyzing empirical data.

4.3 DESCRIPTIVE STATISTICS

The brief presentation of descriptive statistics provides mean scores, standard deviations, and minimum and maximum scores. The sample sizes vary in the tables below due to missing values or cases for specific variables.

4.3.1 The subjects

4.3.1.1 Age distribution of the respondents

Age distribution of the respondents was divided into two groups and statistical analyses carried out.

Table 1: Frequencies of Age

	FREQUENCY	PERCENT
> 39	31	36.9
< 40	38	45.2
Total	69	82.1
Missing	15	17.9
TOTAL	84	100.0

The results showed that the majority of the respondents, thirty eight (45.2%) are more than 40 years, (36.9%) are less than 39 and (17.9%) did not enter their age. The results show that the subjects are mature adults that have been in the profession for some time.

4.3.1.2 Years of experience

Years of experience of the respondents were divided into three namely <10; 11-20 and >20 years.

Table 2: Frequencies of Years of experience

	FREQUENCY	PERCENT
<10	24	28.6
11-20	22	26.2
>20	26	31.0
Total	72	85.7
BLANK	12	14.3
TOTAL	84	100.0

The results showed that most of the respondents had given more than 20 years of service to the profession (31%), with 28.6% giving less than 10 years and 26.2% giving between 11 and 20 years of service.

4.3.1.3 Response rate according to type of unit/ward.

The majority of the sample was from Trauma and Emergency (21.4%) and Surgical wards (21.4%). The medical wards accounted for (16.7%); Intensive care units accounted for (15.4%); theatre accounted for (14.2%) of the response. Maternity wards accounted for (10%) of the sample response.

Table 3: Frequencies of Work Area

Type of ward/unit	Response number	Response percentage
Trauma and Emergency	18	21.4
Intensive care units	13	15.5
Maternity ward	9	10.7
Theatre	12	14.3
Surgical wards	18	21.4
Medical	14	16.7
TOTAL	84	100

4.4 DOCUMENT REVIEW

As a more objective indicator of workload, statistics were obtained regarding the average bed occupancy percentage (i.e. intensive care units, medical, surgical, maternity, trauma and emergency and theatre) for different units over the month period in which this study was conducted. These statistics were provided by the Deputy Director Nursing (refer to table 4 and 5).

These statistics provide an indicator of comparative workload with respect to each of the units below. The maternity and surgical wards had the highest patient number ratio at the time of this study. Above 75% bed occupancy in a unit is generally regarded as a high

patient load according to anecdotal accounts of nursing authorities at this hospital. In summary all the different units had a high patient load at the time of this study.

Table 4: Average bed occupancy percentage for ICU; Trauma and Emergency wards; maternity; surgical and medical wards over a period of July 2005.

	ICU	MAT	SURG	MED	TRA&EMERG WARDS
Bed occup.(%)	77.8%	115%	93.8%	85.1%	81.3%

Key to Table 4:
ICU. (Intensive care unit)
MAT. (Maternity wards)
SURG. (Surgical wards)
MED. (Medical wards)
TRAU&EMERG. (Trauma and Emergency wards)
OCCUP. (Occupancy)

Since it would be impractical to talk of bed occupancy ratios in Theatre and Trauma and Emergency, patient attendance figures would be more appropriate. Total patient attendance figures for the month of July 2005 are presented below for both Theatre and Trauma and Emergency units (i.e. at the time of the study).

Table 5: Average number of patients attending Theatre and Trauma and Emergency units over a period of a month of July 2005 and the year 2004.

	Theatre	Trauma & Emergency units
Patient numbers for July 2005	1972	3542
Average Patient numbers for year 2004	1964.9	3472.6

In an attempt to present a more objective indication of workload within a unit, average monthly attendance figures for the year 2004 is provided as a yardstick of comparison. With regard to Theatre, average patient attendance for the year 2004 compares quite favourably with total patient attendance for the month of July 2005. However Trauma and Emergency units had much higher total patient attendance figures in comparison with average monthly attendance for the year 2004.

4.5 NURSING STRESS SCALE (NSS) (Gray-Toft & Anderson, 1981b)

A number of potential sources of stress have been identified in hindering nurses in their performance of their duties. An examination of the mean scores gives an indication as to which potential sources of stress were frequently perceived be to most problematic by the sample.

Table 6: Nursing Stress Scale (Gray-Toft & Anderson)

SOURCES OF STRESS	Mean	Standard Deviation	Maximum	Minimum	n
Emotional issues related to death and dying	1.56	0 .60	3.00	0.00	77
Conflict with Physicians, Nurses and Supervisors	1.24	0.49	2.60	0.20	81
Inadequate preparation to meet the emotional demands of patients and their families.	1.19	0.56	3.00	0.00	82
Lack of support	1.37	0.78	3.00	0.00	80
Conflict with other nurses	1.05	0.51	2.60	0.00	78
Workload	1.99	0.58	3.00	0.43	77
Uncertainty concerning treatment	1.16	0.64	2.80	0.00	82

The most frequently reported source of stress appears to be 'workload' (mean=1.99, n=77) followed by 'emotional issues related to death and dying' (mean=1.56, n=81). The least frequently reported source of perceived stress is 'conflict with other nurses' (mean=1.05, n=77).

Table 7: Sources of Stress (36 items)

STATEMENT	n	Minimum	Maximum	Mean	Standard Deviation
Performing procedures that patients experiencing as painful	84	0	3	1.64	0.755
Feeling helpless in the case of a patient who fails to improve	84	0	3	1.74	0.838
Listening or talking to a patient about his /her approaching death	82	0	3	1.13	0.872
The death of a patient	81	0	3	1.74	0.905
The death of a patient with whom you developed a close relationship	84	0	3	1.44	0.923
Physician not being present when a patient dies	84	0	3	1.31	1.053
Watching a patient suffer	82	0	3	1.98	0.831
Criticism by a physician	83	0	3	1.30	0.866
Conflict with a physician	84	0	3	1.24	0.816
Fear of making a mistake in treating a patient	84	0	3	1.14	0.697
Disagreement concerning the treatment of a patient	83	0	3	1.14	0.627
Making a decision concerning a patient when a physician is unavailable	83	0	3	1.31	0.679
Feeling inadequately prepared to help with emotional needs of a patient's family	84	0	3	1.24	0.770
Being asked a question by a patient for which I do not have a satisfactory answer	84	0	3	1.26	0.623
Feeling inadequately prepared to help with emotional needs of the patient	82	0	3	1.10	0.678
Lack of opportunity to talk openly with other unit personnel about problems in the unit	82	0	3	1.40	0.967

STATEMENT	n	Minimum	Maximum	Mean	Standard Deviation
Lack of opportunity to share experiences and feelings with other personnel in the unit	83	0	3	1.29	0.957
Lack of opportunity to express to other personnel in the unit my negative feelings towards patients	81	0	3	1.10	0.903
Lack of support system available in the hospital	83	0	3	1.73	0.976
Conflict with a supervisor	82	0	3	.96	0.881
Floating to other units that are short-staffed	81	0	3	1.49	0.924
Difficulty in working with a particular nurse	82	0	3	.96	0.693
Criticism by a supervisor	82	0	3	.95	0.752
Difficulty in working with a particular nurse in the unit	82	0	3	.90	0.696
Breakdown or malfunction of computer	83	0	3	1.54	0.979
Unpredictable staffing and scheduling	82	0	3	1.88	0.921
Too many non-nursing tasks required, such as clerical work	83	0	3	2.13	0.894
Not enough time to provide emotional support to a patient	82	0	3	2.09	0.820
Not enough time to complete all nursing tasks	83	0	3	1.87	0.894
Not enough staff to adequately cover unit	83	0	3	2.36	0.742
Not getting the scarce skill allowance	79	0	3	2.04	1.305
Inadequate information from a physician regarding the medical condition of a patient	83	0	3	1.39	0.895
A physician ordering what appears to be inappropriate treatment for a patient	84	0	3	1.01	0.799

STATEMENT	n	Minimum	Maximum	Mean	Standard Deviation
A physician not being present in a medical emergency	83	0	3	1.16	0.833
Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment	82	0	3	1.22	0.721
Uncertainty regarding the operation and functioning of specialized equipment	82	0	3	1.05	0.845

The greatest source of stress appears to be "not enough staff to adequately cover unit (mean =2.36, n=83) followed by non-nursing tasks required, such as clerical work (mean=2.13, n=83), and "not enough time to provide emotional support to a patient (mean=2.09, n=82). The least source of perceived stress is "difficulty in working with a particular nurse in the unit".

Table 8: Sources of Stress (Gray-Toft and Anderson) by age

GROUP	Mean	Median	Standard Deviation	n
<=39	1.36	1.44	0.447	25
>=40	1.38	1.35	0.433	30
Total	1.37	1.39	0.435	55

With regard to age category, group of subjects that are 40 years old or older were associated with slightly more frequent stress (mean=1.38, n=30) than less than or equal to 39 years old (mean=1.36, n=25).

Table 9: Sources of Stress (Gray-Toft and Anderson) by years of experience

GROUP	Mean	Median	Standard Deviation	n
<10	1.40	1.53	0.470	19
11-20	1.32	1.32	0.402	16
>20	1.43	1.42	0.435	22
Total	1.39	1.44	0.433	57

The 20 and more year service category was associated with more frequent stress (mean=1.43, n=22) than the 10 year category (mean=1.40, n=19) and 11-20 year service category (mean=1.32, n=16).

Table 10: Sources of stress per unit/ward

Sources of stress	Ward/unit	n	Mean	Standard Deviation
Death and dying	Trau & Emer	15	1.45	0.389
	Intensive care units	11	1.83	0.560
	Maternity	9	1.25	0.703
	Theatre	11	1.19	0.723
	Surgical	17	1.65	0.450
	Medical	14	1.84	0.629
Conflict with Physician	Trau & Emer	17	1.21	0.342
	Intensive care units	13	1.26	0.369
	Maternity	9	1.07	0.591
	Theatre	10	1.26	0.500
	Surgical	18	1.23	0.562
	Medical	14	1.36	0.613
Inadequately preparation to deal with patients needs	Trau & Emer	17	1.35	0.492
	Intensive care units	13	1.15	0.464
	Maternity	9	1.15	0.530
	Theatre	12	0.94	0.489
	Surgical	18	1.22	0.604
	Medical	13	1.26	0.748
Lack of support	Trau & Emer	16	1.31	0.803
	Intensive care units	13	1.38	0.781
	Maternity	9	1.11	0.792
	Theatre	12	1.27	0.757
	Surgical	17	1.50	0.824
	Medical	13	1.52	0.787

Sources of stress	Ward/unit	n	Mean	Standard Deviation
Conflict with Physician, Nurses & Supervisors	Trau & Emer	18	0.878	0.513
	Intensive care units	13	1.37	0.515
	Maternity	8	0.75	0.410
	Theatre	10	1.22	0.447
	Surgical	17	1.02	0.430
	Medical	12	1.03	0.602
Workload	Trau & Emer	16	1.91	0.460
	Intensive care units	13	2.13	0.548
	Maternity	8	1.73	0.710
	Theatre	10	1.73	0.695
	Surgical	16	2.17	0.441
	Medical	14	2.04	0.694
Uncertainty concerning treatment	Trau & Emer	18	1.20	0.729
	Intensive care units	13	1.09	0.507
	Maternity	9	1.04	0.638
	Theatre	12	0.87	0.646
	Surgical	17	1.30	0.588
	Medical	13	1.35	0.679

Key to Table 10: Trau & Emer (Trauma and Emergency)

Medical ward scored higher on emotional issues related to death and dying (n=14, mean 1.84); conflict with physician (n=14, mean=1.36); lack of support (n=13, mean 1.52); and uncertainty concerning treatment (n=13, mean=1.35). The intensive care unit scored high on emotional issues related to death and dying (n=11, mean=1.83) and conflict with Physician, Nurses & Supervisors (n=13, mean=1.37). Trauma and Emergency unit scored higher on inadequately preparation to deal with patients needs (n=17, mean=1.35). Surgical ward scored higher on workload (n=16, mean=2.17).

Table 11: Overall stress scores per unit/ward

Unit/ward by sources of stress	Mean	Standard Deviation	Maximum	Minimum	Total number
Trauma & Emergency	1.37	0.35	1.86	0.81	18
Intensive care	1.51	0.39	2.36	1.89	13
Maternity	1.08	0.52	1.78	0.28	9
Theatre	1.21	0.55	2.33	0.58	12
Surgical	1.51	0.40	2.14	0.89	18
Medical	1.45	0.47	2.11	0.58	14

Intensive care units (mean=1.51, n=13) and surgical wards was associated with more frequent stress (mean=1.51, n=18) than medical wards (mean=1.45, n=14) . Maternity appear to be less stressed (mean=1.08, n=9).

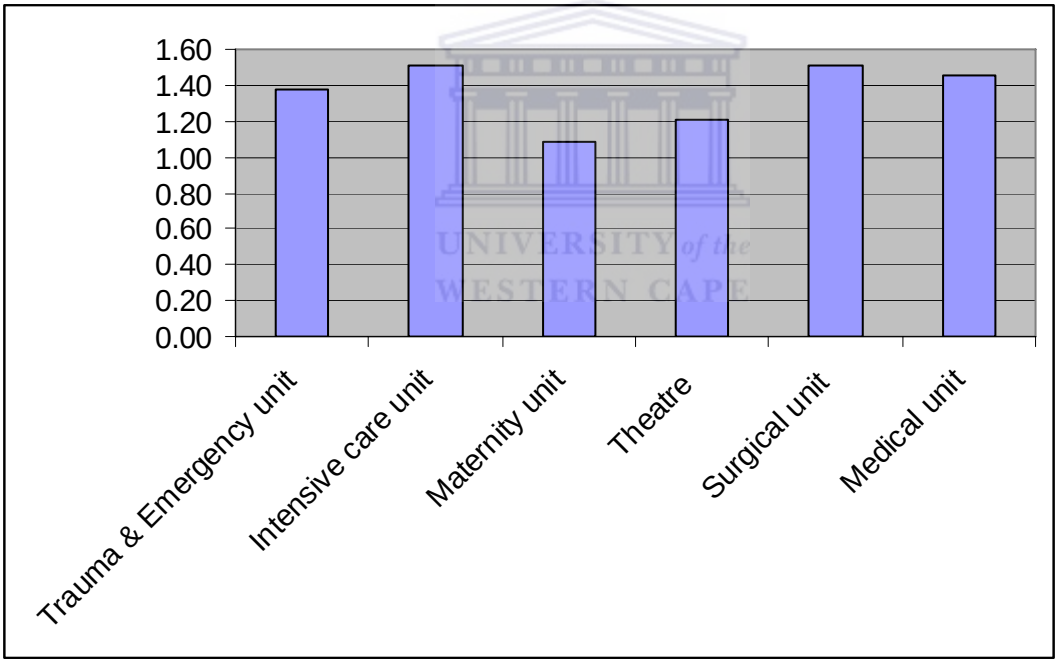

Figure 1: Graph of overall stress scores by ward

4.6 WAYS OF COPING

The various subscales scores below give an indication as to the extent to which subjects employ various coping strategies. Subjects' scores were simply calculated by adding their ratings on all items of each category and then dividing by the number of items of that category (i.e. providing a mean category response score.

Table 12: Ways of Coping (Folkman and Lazarus 1988b)

Coping strategies	Mean	Standard Deviation	Maximum	Minimum	Total Number
Confronting Coping	1.19	0.55	2.50	0.00	79
Distancing	1.10	0.52	2.50	0.00	77
Self controlling	1.41	0.49	2.43	0.29	76
Seeking social support	1.47	0.51	2.83	0.33	81
Accepting responsibility	1.39	0.53	2.60	0.00	76
Escape avoidance	0. 69	0.47	2.00	0.00	77
Planful problem solving	1.82	0.67	3.00	0.00	82
Positive reappraisal	1.99	0.55	3.00	0.43	76

Registered Nurses seem to be resorting more to "positive reappraisal" (mean=1.99, n=76), "planful problem-solving"(mean=1.82, n=82) and "seeking social support" (mean=1.47, n=81) strategies. "Escape avoidance' as a coping strategy seems to be employed the least (mean=.69, n=77).

Table 13: Ways of Coping (51 items)

STATEMENT	n	Minimum	Maximum	Mean	Standard Deviation
Uncertainty regarding the operation and functioning of specialized equipment	82	0	3	1.05	0.845
I did something which I didn't think would work, but at least I was doing something	83	0	3	1.11	0.765
Tried to get person(s) responsible to change his or her mind	83	0	3	1.25	0.839
I expressed anger to the person(s) who caused the problem	83	0	3	0.95	0.731
I let my feelings out somehow	82	0	3	1.44	0.862
Took a big chance or did something very risky	83	0	3	0.67	0.751
Stood my ground and fought for what I wanted	84	0	3	1.63	0.875
Went along with fate; sometimes I just have bad luck	83	0	3	0.72	0.668
Went on as if nothing had happened	84	0	3	0.83	0.758
Looked for the silver lining, so to speak; tried to look on the bright side of things	84	0	3	1.55	0.827
Tried to forget the whole thing	78	0	3	1.13	0.888
Didn't let it get to me; refused to think about it too much	83	0	3	1.41	0.812
I did not want to come to work	82	0	3	0.93	0.927
Tried not to burn my bridges, but leave things open somewhat	79	0	3	1.06	0.774
I tried to keep my feelings to myself	83	0	3	1.33	0.813

STATEMENT	n	Minimum	Maximum	Mean	Standard Deviation
I tried not to act too hastily or follow my first hunch	82	0	3	1.60	0.844
Kept others from knowing how bad things were	83	0	3	1.23	0.874
I tried to keep my feelings from interfering with other things too much	82	0	3	1.62	0.826
I went over in my mind what I would say or do	83	0	3	1.70	0.852
I thought about how a person I admire would handle the situation and used that as a model	81	0	3	1.52	0.923
Talked to someone to find out more about the situation	83	0	3	1.83	0.746
Accepted sympathy and understanding from someone	82	0	3	1.55	0.740
I got professional help from work	83	0	3	0.52	0.861
Talked to someone who could do something concrete about the problem	82	0	3	1.50	0.835
I asked a relative or a friend I respected for advice	83	0	3	1.59	0.870
Talked to someone about how I was feeling	83	0	3	1.86	0.798
Criticized or lectured myself	82	0	3	1.37	0.882
Self introspection	80	0	3	1.64	0.917
I apologized or did something to make up	82	0	3	1.54	0.773
Realized I brought the problem on myself	82	0	3	1.02	0.608
I made a promise to myself that things would be different next time	83	0	3	1.54	0.770
Hoped a miracle would happen	82	0	3	0.99	0.923

STATEMENT	n	Minimum	Maximum	Mean	Standard Deviation
Slept more than usual	81	0	3	0.65	0.824
Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, and so forth	83	0	3	0.46	0.738
Avoided being with people in general	83	0	3	0.61	0.746
Took it out on other people	83	0	3	0.46	0.591
Refused to believe it had happened	82	0	3	0.46	0.613
Wished that the situation would go away or somehow turn out	82	0	3	0.87	0.828
Had fantasies or wishes about how things might turn out	81	0	3	1.02	0.851
Just concentrated on what I had to do next-the next step	83	0	3	1.69	0.764
I made a plan of action and followed it	83	0	3	1.77	0.831
Changed something so things would turn out all right	82	0	3	1.61	0.885
Used past experiences to manage situation	83	0	3	2.02	0.841
I knew what had to be done, so I doubled my efforts to make things work	83	0	3	1.96	0.890
Came up with a couple of different solutions to the problem	83	0	3	1.92	0.768
I was inspired to do something creative	78	0	3	1.55	0.767
Changed or grew as a person in a good way	83	0	3	2.18	0.751
I came out of the experience better than when I went in	83	0	3	2.12	0.755
Found new faith	83	0	3	1.81	0.943
Rediscovered what is important in life	83	0	3	2.05	0.795

STATEMENT	n	Minimum	Maximum	Mean	Standard Deviation
I changed something about myself	84	0	3	1.93	0.833
I prayed for assistance	84	0	3	2.23	0.910

Registered nurses seem to be resorting more to “prayer for assistance” (mean=2.23, n=84) followed by “changed or grew as a person in a good way” (mean=2.18, n=83). “Took it out on other people” (mean=.46, n=83) and “refused to believe it had happened” (mean=.46, n=82) as coping strategies seem to be employed the least.

Table 14: Ways of Coping by Age

GROUP	Mean	Standard Deviation	Median	n
<= 39	1.38	0.386	1.33	22
>= 40	1.29	0.304	1.31	27
Total	1.35	0.337	1.32	49

With regard to age category, less or equal to 39 year old seem to be resorting more to coping strategies (mean=1.38, n=22) than 40 years old or older (mean=1.29, n=27).

Table 15: Ways of Coping by years of experience

GROUP	Mean	Standard Deviation	Median	n
<10	1.32	0.390	1.32	18
11-20	1.37	0.348	1.33	15
>20	1.36	0.311	1.32	18
Total	1.35	0.344	1.33	51

The 11-20 year service category seem to be resorting more to coping strategies (mean= 1.37, n=15) than the 20 and more year category (mean=1.36, n=18) and less than 10 year service category (mean=1.32, n=25).

Table 16: Coping strategies per unit/ward

Coping strategies	Ward/unit	n	Mean	Standard Deviation
Confronting coping	Trau & Emer	16	1.07	0.447
	Intensive care units	13	1.00	0.397
	Maternity	8	1.04	0.700
	Surgical	12	1.30	0.673
	Medical	14	1.45	0.575
Distancing	Trau & Emer	17	1.03	0.575
	Intensive care units	12	0.94	0.287
	Maternity	7	1.09	0.725
	Theatre	11	1.01	0.508
	Surgical	17	1.06	0.404
	Medical	13	1.45	0.563
Self controlling	Trau & Emer	16	1.30	0.489
	Intensive care units	12	1.38	0.346
	Maternity	8	1.57	0.566
	Theatre	11	1.35	0.467
	Surgical	17	1.35	0.541
	Medical	12	1.64	0.543

Coping strategies	Ward/unit	n	Mean	Standard Deviation
Seeking social support	Trau & Emer	17	1.32	0.649
	Intensive care units	13	1.40	0.507
	Maternity	9	1.42	0.465
	Theatre	11	1.61	0.501
	Surgical	17	1.51	0.393
	Medical	14	1.57	0.492
Accepting responsibility	Trau & Emer	16	1.24	0.612
	Intensive care units	13	1.29	0.459
	Maternity	9	1.42	0.777
	Theatre	11	1.36	0.250
	Surgical	15	1.48	0.574
	Medical	12	1.60	0.352
Escape avoidance	Trau & Emer	16	0.422	0.403
	Intensive care units	13	0.586	0.373
	Maternity	7	0.357	0.274
	Theatre	11	0.841	0.349
	Surgical	18	0.771	0.454
	Medical	12	1.10	0.524
Planful problem solving	Trau & Emer	17	1.66	0.832
	Intensive care units	13	1.65	0.591
	Maternity	9	1.48	0.637
	Theatre	12	1.85	0.575
	Surgical	18	2.00	0.619
	Medical	13	2.13	0.541

Registered nurses in the medical ward scored high in all the coping strategies except seeking social support; confronting coping (n=14, mean=1.45); distancing (n=13, mean=1.45); self controlling (n=12, mean=1.64); accepting responsibility (n=12, mean=1.60); escape avoidance (n=12, mean=1.10) and planful problem solving (n=13, mean=2.13). Theatre scored high in seeking social support (n=11, mean=1.61). Intensive Care unit scored low in confronting coping (n=13, mean=1.00) and distancing (n=12,

mean=0.94). Trauma and Emergency scored low in self controlling (n=16, mean=1.30), seeking social support (n=17, mean=1.32) and accepting responsibility (n=16, mean=1.24). Maternity scored low in escape avoidance (n=7, mean=0.357) and planful problem solving (n=9, mean=1.48).

Table 17: Coping Strategies scores per unit/ward

Unit/ward by coping strategies	Mean	Standard Deviation	Maximum	Minimum	Total Number
Trauma & Emergency	1.22	0.42	2.08	0.61	18
Intensive Care	1.29	0.23	1.71	0.84	13
Maternity	1.23	0.47	1.65	0.57	9
Theatre	1.35	0.20	1.67	1.12	12
Surgical	1.44	0.32	1.90	1.02	18
Medical	1.54	0.32	1.86	0.96	14

Registered nurses in the Medical wards seem to employ more coping strategies (mean=1.54, n=14) than registered nurses in the Surgical wards (mean=1.44, n=18) and Theatre (mean=1.35, n=12). Registered nurses in the Trauma and Emergency units employed least coping strategies (mean=1.22, n=18).

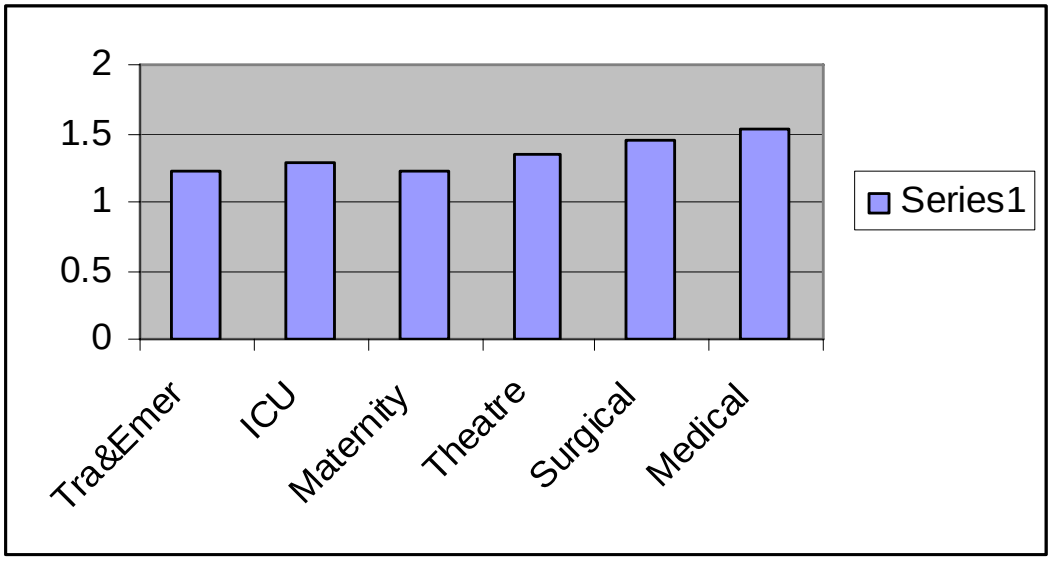

Figure 2: Graph of coping by Ward/Unit

4.7. INFERENCIAL STATISTICS

4.7.1 Analysis of demographic variables by sources of stress

Independent sample T test analysis and Analysis of Variance (ANOVA) procedures were conducted in order to assess whether or not the demographic variables were significant sources of variance in terms of sources of stress.

4.7.1.1 Age on sources of stress

Table 18: Independent T test analysis: Age on sources of stress

SOURCES OF STRESS	f	p
Death and dying	0.219	0.641
Conflict with Physician	0.025	0.876
Inadequately preparation to deal with patients needs	2.360	0.129
Lack of support	0.266	0.608
Conflict with Physician, Nurses & Supervisors	0.150	0.700
Workload	0.310	0.580
Uncertainty concerning treatment	0.587	0.446

Independent sample T test revealed no significant differences between the two age groups on the stress scale overall (f= 0.017 p=0.897) or within any of the sub-scales (Table 18).

4.7.1.2 Years of experience on sources of stress

Table19: Analysis of Variance (ANOVA): Years of experience on sources of stress

SOURCES OF STRESS	f	p
Death and dying	0.103	0.902
Conflict with Physicians	0.247	0.782
Inadequately preparation to deal with patients needs	0.706	0.497
Lack of support	0.059	0.942
Conflict with Physicians, Nurses and Supervisors	1.577	0.214
Workload	0.654	0.524
Uncertainty concerning treatment	0.582	0.562

One way ANOVA revealed no significant differences between the groups on sources of stress in terms of years of experience overall (f=.294 p=0.746) or within any of the subscales (Table 19).

4.7.1.3 Type of ward/unit on sources of stress

Table 20: Analysis of Variance (ANOVA). Type of ward/unit on sources of stress

SOURCES OF STRESS	f	p
Death and dying	2.824	0.022
Conflict with physician	0.388	0.856
Inadequately preparation to deal with patients needs	0.803	0.551
Lack of support	0.429	0.827
Conflict with Physician, Nurses & Supervisors	2.359	0.049
Workload	1.299	0.274
Uncertainty concerning treatment	1.024	0.410

No significant difference in terms of work area on sources of stress (f=1.385, p=0.243), except within sub-scales for death and dying and conflict with Physician, Nurses & Supervisors $p<0.05$ (Table 20).

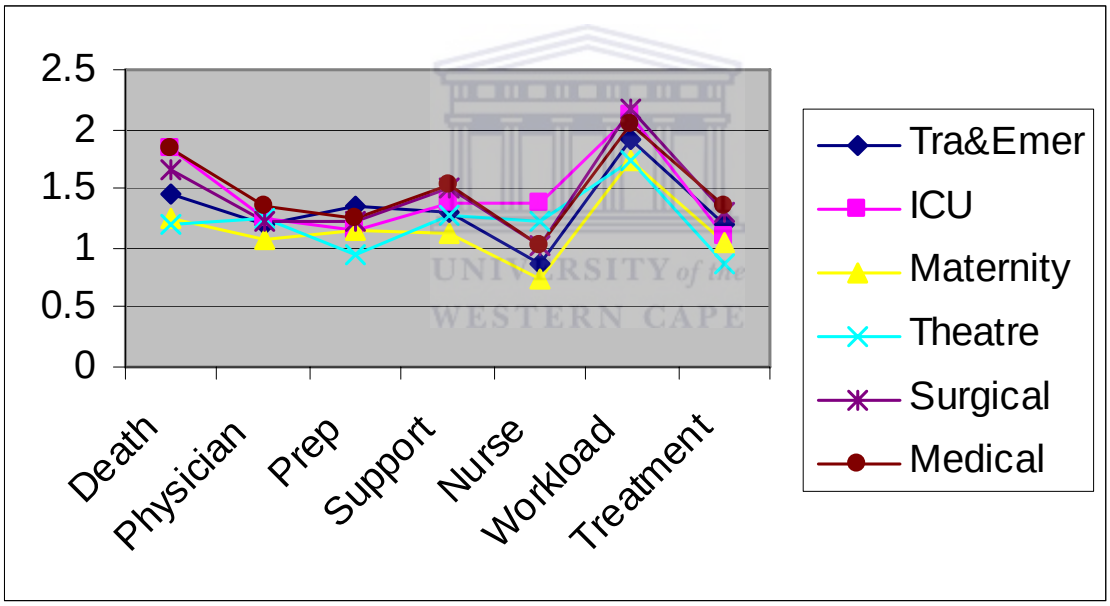

Figure 3: Sources of stress by type of unit

Key to Figure 3:Tra& Emer (Trauma and Emergency units); ICU (Intensive care units); Death (Death and dying); Physician (Conflict with Physician); Prep (Inadequately preparation to deal with patients needs); Support (Lack of support); Nurse (Conflict with Physician, Nurses & Supervisors); Treatment (Uncertainty concerning treatment).

Multiple comparison analyses were conducted on each of the scales separately with ward/unit type as the independent variable and following results emerged:

- Intensive care units scored significantly higher on 'emotional issues related to death and dying' as compared to maternity (p-value=0.026) and theatre (p-value=0.010).
- Medical wards scored significantly higher on 'emotional issues related to death and dying' as compared to maternity (p-value=0.019) and theatre (p-value=0.006).
- Intensive care units also significantly scored higher on 'conflict with physician, Nurses and Supervisors' as compared to Trauma & Emergency units (p-value=0.008) and maternity (p-value=0.007).

4.7.1.4 Age on coping strategies

Table 21: Independent T test analysis: Age on coping strategies

COPING STRATEGIES	f	p
Confronting coping	0.281	0.598
Distancing	0.652	0.423
Self controlling	0.001	0.972
Seeking social support	2.608	0.111
Accepting responsibility	2.489	0.120
Escape avoidance	0.027	0.870
Planful problem-solving	7.322	0.009
Positive reappraisal	4.814	0.032

No significant difference in coping strategies used in terms of age except planful problem solving (f=7.322, p=0.009) and positive reappraisal (f=4.814, p=0.032) (Table 21).

4.7.1.5 Years of experience on coping strategies

Table 22: Analysis of Variance (ANOVA): Years of experience on coping strategies

COPING STRATEGIES	f	p
Confronting coping	0.080	0.923
Distancing	0.168	0.846
Self controlling	0.235	0.791
Seeking social support	0.926	0.401
Accepting responsibility	2.627	0.080
Escape avoidance	0.002	0.998
Planful problem-solving	0.222	0.802
Positive reappraisal	0.188	0.829

No significant difference in coping strategies used in terms of years of experience (Table 22).

4.7.1.6 Type of ward/unit on coping strategies

Table 23: Analysis of variance (ANOVA): Type of ward/unit on coping strategies

COPING STRATEGIES	f	p
Confronting coping	1.325	0.263
Distancing	1.597	0.172
Self controlling	0.926	0.470
Seeking social support	0.628	0.679
Accepting responsibility	0.831	0.532
Escape avoidance	5.182	0.000
Planful problem-solving	1.761	0.131
Positive reappraisal	1.159	0.338

No significant difference in coping strategies used were seen in terms of work area overall ($f=1.356$, $p=>0.05$), however there was a significant difference for the escape avoidance sub-scale ($p=<0.05$) (Table 23).

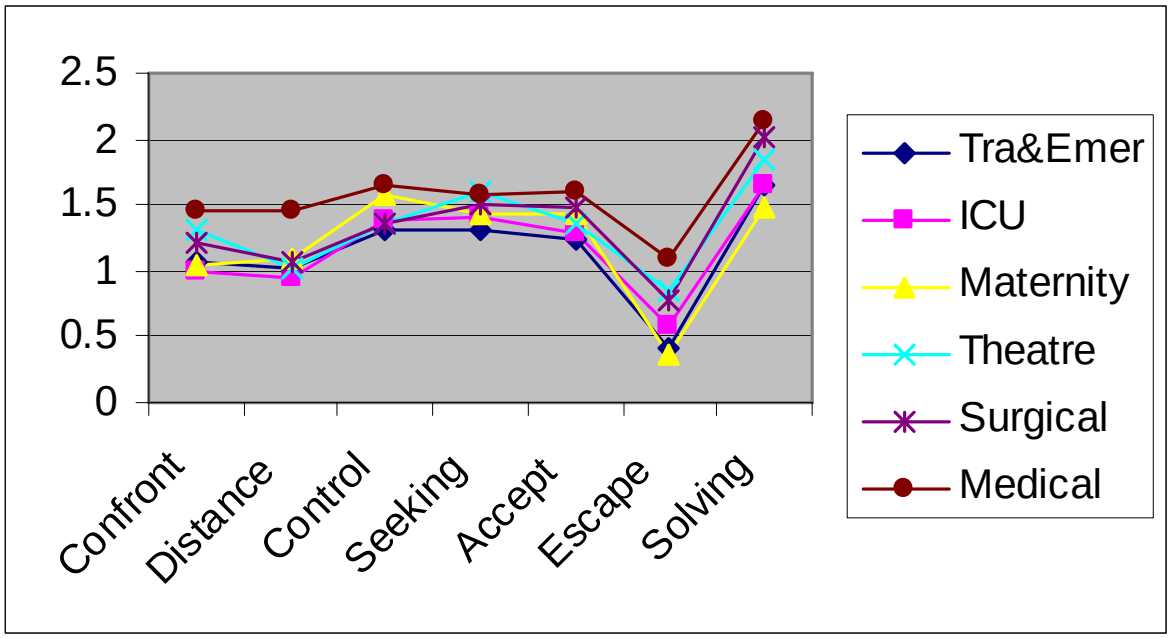

Figure 4: Coping strategies by type of unit

Key to Figure 4:
Tra&Emer (Trauma and Emergency units; ICU (Intensive care units); Confront (Confronting coping); Distance (Distancing); Control (Self controlling); Seeking (Seeking social support); Accept (Accepting responsibility); Escape (Escape avoidance); Solving (Planful problem-solving).

In the multiple comparisons analysis the following findings were seen with regard to frequency of coping strategies used by the nurses:

- Medical wards scored significantly higher on 'confronting coping' as compared to Intensive care units (p-value=0.036).Medical wards scored significantly higher on 'distancing' as compared to Trauma and Emergency units (p-value=0.028), Intensive care units (p-value=0.016) and Theatre (p-value=0.041).

- Medical wards scored significantly higher on ‘escape avoidance’ as compared to Trauma and Emergency (p-value=0.003), Surgical (p-value=0.035) and Maternity (p-value=0.000).
- Medical wards also scored significantly higher on problem solving as compared to Maternity (p-value=0.025).

4.7.2 CORRELATIONS

A correlation matrix was calculated to examine the correlations among variables. Due to complexity and the dynamic nature of the stress system one would expect a high degree of interdependency between variables. Table 24 below presents the complete correlation analysis comparing stress and coping variables. Statistically significant relationships are highlighted in bold.

Table 24: Pearson Correlations: Sources of Nurse Stress Scales (Gray-Toft and Anderson,1981b) and Ways of Coping (Folkman and Lazarus, 1981b)

VARIABLES		R	p
TYPE OF STRESS	**COPING STRATEGY**		
Death & dying	**Confronting coping**	**0.459**	**<.01**
Death & dying	**Distancing**	**0.249**	**<.01**
Death & dying	Self controlling	0.206	>.05
Death & dying	**Seeking social support**	**0.274**	**<.05**
Death & dying	**Accepting responsibility**	**0.359**	**<.01**
Death & dying	**Escape avoidance**	**0.363**	**<.01**
Death & dying	**Planful problem-solving**	**0.379**	**<.01**
Death & dying	**Positive reappraisal**	**0.328**	**<.01**
Conflict with physicians	**Confronting coping**	**0.432**	**<.01**
Conflict with physicians	Distancing	0.017	>.05
Conflict with physicians	Self controlling	0.002	>.05
Conflict with physicians	Seeking social support	0.182	>.05
Conflict with physicians	Accepting responsibility	0.210	>.05
Conflict with physicians	**Escape avoidance**	**0.236**	**<.05**
Conflict with physicians	Planful problem-solving	0.105	>.05
Conflict with physicians	Positive reappraisal	0.103	>.05
Inadequately prepared to deal with patients needs	**Confronting coping**	**0.276**	**<.05**
Inadequately prepared to deal with patients needs	**Distancing**	**0.213**	**<.05**
Inadequately prepared to deal with patients needs	Self controlling	0.058	>.05

TYPE OF STRESS	COPING STRATEGY	R	p
Inadequately prepared to deal with patients needs	**Seeking social support**	**0.265**	**<.05**
Inadequately prepared to deal with patients needs	**Accepting responsibility**	**0.313**	**<.01**
Inadequately prepared to deal with patients needs	Escape avoidance	0.181	>.05
Inadequately prepared to deal with patients needs	Planful problem-solving	-0.005	>.05
Inadequately prepared to deal with patients needs	Positive reappraisal	0.093	>.05
Lack of support	**Confronting coping**	**0.538**	**<.01**
Lack of support	Distancing	0.138	>.05
Lack of support	Self controlling	0.155	>.05
Lack of support	Seeking social support	0.053	>.05
Lack of support	Accepting responsibility	0.197	>.05
Lack of support	**Escape avoidance**	**0.305**	**<.01**
Lack of support	Planful problem-solving	0.135	>.05
Lack of support	**Positive reappraisal**	**0.295**	**<.05**
Conflict with Physicians, Nurses & Supervisors	**Confronting coping**	**0.494**	**<.01**
Conflict with Physicians, Nurses & Supervisors	Distancing	-0.058	>.05
Conflict with Physicians, Nurses & Supervisors	Self controlling	0.092	>.05
Conflict with Physicians, Nurses & Supervisors	Seeking social support	-0.030	>.05
Conflict with Physicians, Nurses & Supervisors	Accepting responsibility	0.072	>.05

TYPE OF STRESS	COPING STRATEGY	R	p
Conflict with Physicians, Nurses & Supervisors	**Escape avoidance**	**0.281**	**<.05**
Conflict with Physicians, Nurses & Supervisors	Planful problem-solving	0.120	>.05
Conflict with Physicians, Nurses & Supervisors	Positive reappraisal	0.118	>.05
Workload	**Confronting coping**	**0.498**	**<.01**
Workload	Distancing	0.213	>.05
Workload	Self controlling	0.195	>.05
Workload	Seeking social support	0.218	>.05
Workload	Accepting responsibility	0.234	>.05
Workload	**Escape avoidance**	**0.371**	**<.01**
Workload	**Planful problem-solving**	**0.332**	**<.01**
Workload	**Positive reappraisal**	**0.370**	**<.01**
Uncertainty concerning treatment	**Confronting coping**	**0.445**	**<.01**
Uncertainty concerning treatment	Distancing	-0.025	>.05
Uncertainty concerning treatment	Self controlling	0.142	>.05
Uncertainty concerning treatment	Seeking social support	0.111	>.05
Uncertainty concerning treatment	Accepting responsibility	0.170	>.05
Uncertainty concerning treatment	Escape avoidance	0.205	>.05
Uncertainty concerning treatment	Planful problem-solving	-0.002	>.05
Uncertainty concerning treatment	Positive reappraisal	0.163	>.05

TYPE OF STRESS	TYPE OF STRESS	R	p
Death & dying	**Conflict with Physicians, Nurses & Supervisors**	**0.481**	**<.01**
Death & dying	**Inadequately prepared to deal with patients needs**	**0.275**	**<.05**
Death & dying	**Lack of support**	**0.247**	**<.05**
Death & dying	**Conflict with Physicians, Nurses & Supervisors**	**0.368**	**<.01**
Death & dying	**Workload**	**0.565**	**<.01**
Death & dying	**Uncertainty concerning treatment**	**0.424**	**<.01**
Conflict with physicians	**Inadequately prepared to deal with patients needs**	**0.288**	**<.01**
Conflict with physicians	**Lack of support**	**0.487**	**<.01**
Conflict with physicians	**Conflict with Physicians, Nurses & Supervisors**	**0.542**	**<.01**
Conflict with physicians	**Workload**	**0.508**	**<.01**
Conflict with physicians	**Uncertainty concerning treatment**	**0.636**	**<.01**
Inadequately prepared to deal with patients needs	**Lack of support**	**0.233**	**<.05**
Inadequately prepared to deal with patients needs	Conflict with Physicians, Nurses & Supervisors	0.070	>.05
Inadequately prepared to deal with patients needs	**Workload**	**0.277**	**<.05**
Inadequately prepared to deal with patients needs	**Uncertainty concerning treatment**	**0.415**	**<.01**
Lack of support	**Conflict with Physicians, Nurses & Supervisors**	**0.583**	**<.01**

TYPE OF STRESS	TYPE OF STRESS	R	p
Lack of support	**Workload**	**0.572**	**<.01**
Lack of support	**Uncertainty concerning treatment**	**0.572**	**<.01**
Conflict with Physicians, Nurses & Supervisors	**Workload**	**0.455**	**<.01**
Conflict with Physicians, Nurses & Supervisors	**Uncertainty concerning treatment**	**0.484**	**<.01**
Workload	**Uncertainty concerning treatment**	**0.499**	**<.01**
COPING STRATEGY	**COPING STRATEGY**	R	p
Confronting coping	**Distancing**	**0.377**	**<.01**
Confronting coping	**Self controlling**	**0.325**	**<.01**
Confronting coping	**Seeking social support**	**0.383**	**<.01**
Confronting coping	**Accepting responsibility**	**0.383**	**<.01**
Confronting coping	**Escape avoidance**	**0.540**	**<.01**
Confronting coping	**Planful problem-solving**	**0.510**	**<.01**
Confronting coping	**Positive reappraisal**	**0.295**	**<.05**
Distancing	**Self controlling**	**0.394**	**<.01**
Distancing	**Seeking social support**	**0.404**	**<.01**
Distancing	**Accepting responsibility**	**0.438**	**<.01**
Distancing	**Escape avoidance**	**0.563**	**<.01**
Distancing	**Planful problem-solving**	**0.385**	**<.01**
Distancing	**Positive reappraisal**	**0.137**	**<.01**
Self controlling	**Seeking social support**	**0.387**	**<.01**
Self controlling	**Accepting responsibility**	**0.461**	**<.01**
Self controlling	**Escape avoidance**	**0.403**	**<01**
Self controlling	Planful problem-solving	0.225	>.05
Self controlling	**Positive reappraisal**	**0.290**	**<.05**
Seeking social support	**Accepting responsibility**	**0.621**	**<.01**

COPING STRATEGY	COPING STRATEGY	R	p
Seeking social support	**Escape avoidance**	**0.346**	**<.01**
	Planful problem-solving	**0.500**	**<.01**
Seeking social support	Positive reappraisal	0.223	>.05
Accepting responsibility	**Escape avoidance**	**0.428**	**.<01**
Accepting responsibility	**Planful problem-solving**	**0.452**	**<.01**
Accepting responsibility	**Positive reappraisal**	**0.364**	**<.01**
Escape avoidance	**Planful problem-solving**	**0.407**	**<.01**
Escape avoidance	**Positive reappraisal**	**0.247**	**<.05**
Planful problem-solving	**Positive reappraisal**	**0.444**	**<.01**

Significant positive correlations were found between death and dying and the workplace stressors: (a) conflict with physicians (b) inadequately preparation to deal with patients needs (c) lack of support (d) conflict with physician, nurses & supervisors (e) workload and (g) uncertainty about treatment.

Significant positive correlations were found between death and dying and coping mechanisms: (a) confronting coping (b) distancing (c) seeking social support (d) accepting responsibility (e) escape avoidance (f) planful problem-solving and (g) positive reappraisal.

Conflict with physicians was found to have a significant positive correlation with the workplace stressors: (a) inadequately preparation to deal with patients needs (b) lack of

support (c) conflict with other, physician, nurses and supervisors (d) workload and (e) uncertainty regarding treatment.

Significant positive correlations were found between conflict with physicians and coping strategies: (a) confronting coping and escape avoidance.

Inadequate preparation was found to have a significant positive correlation with the workplace stressors: (a) lack of support (b) workload and (c) uncertainty regarding treatment.

Significant positive correlations were found between inadequate preparation and the coping strategies: (a) confronting coping (b) seeking social support and (c) accepting responsibility.

Lack of support was found to be positively correlated with the workplace stressors (a) conflict with physicians, nurses and supervisors (b) workload and (c) uncertainty regarding treatment.

Significant positive correlations were found between lack of support and the coping strategies (a) confronting coping (b) escape avoidance and (c) positive reappraisal.

Conflict with physicians, nurses and supervisors was positively correlated with the workplace stressors: (a) workload and (b) uncertainty regarding treatment.

Positive significant correlations were found between conflict with physicians, nurses and supervisors and coping strategies: (a) confronting coping and escape avoidance.

Workload showed significant positive correlations with workplace stressors: uncertainty about treatment.

Confronting coping was found to have significant positive correlations with the other coping strategies: (a) distancing (b)self controlling (c) seeking social support (d) accepting responsibility (e) escape avoidance (f) planful problem-solving and (g) positive reappraisal.

Significant positive correlations were found between distancing and the other coping strategies: (a) self controlling (b) seeking social support (c) accepting responsibility (d) escape avoidance and (e) planful problem solving.

Self controlling was found to have significant positive correlations with the other coping strategies: (a) seeking social support (b) accepting responsibility (c) escape avoidance and (d) positive reappraisal.

Seeking social support was found to have significant correlations with other coping strategies: (a) accepting responsibility (b) escape avoidance and (c) planful problem solving.

Significant positive correlations were shown between accepting responsibility and the coping strategies: (a) escape avoidance (b) planful problem solving and (c) positive reappraisal.

Escape avoidance was found to have significant positive correlations with other coping strategies: (a) planful problem-solving and (b) positive reappraisal.

Planful problem solving was found to have significant positive correlations with the coping strategy: positive reappraisal.

4.8 CONCLUSION

The results indicated that registered nurses are stressed. Descriptive and inferential statistics were used to analyse the data. The following chapter will include discussion of the study findings, implications and recommendations.

CHAPTER 5

DISCUSSION

5.1 INTRODUCTION

The aim of this study was to identify possible causes and frequency of stress experienced by registered nurses and to identify the coping strategies used. In addition it set out to assess the relationship between stress and adopted coping strategies among the registered nurses in different units/wards.

5.2 STRESS

Stress is considered to result from an imbalance between the demands of the workplace and an individual's ability to cope. Stress and coping in this study were measured specifically by means of frequency of reported sources of stress and ways of coping scales. Having formulated hypothesis on the basis of available literature, this study has accumulated and analysed data relevant to a sample of registered nurses working in a tertiary hospital.

5.3 SOURCES OF STRESS

The most important finding of this study was that frequency of reported stress by registered nurses were high enough to be considered serious. There was no significant difference between registered nurses on the stress scale in terms of age (f=.017, p>0.05) and years of experience (f=.294, p=>0.05). See Tables 16 and 17.

Workload was identified as the most frequent source of stress for the present sample of nurses. The second most reported stressor was emotional issues related to death and dying. These findings are supported by a number of studies (e.g. Tyson and Pongruengphant 2004; Lee 2003; Dewe 1987; 1989; Gray-Toft and Anderson 1981b; Hingley and Cooper 1986; Hipwell et al 1989; Tyler and Cushway 1992. Lambert et al (2004) suggest that, regardless of culture and country specific professional role, nurses identify the amount of work that they are expected to carry out and the emotional issues related to death and dying to be overwhelming. They argue that unless hospital environments, at a global level, contend with nursing workload factors and the stress of contending with patient death and dying issues, it is unlikely that the worldwide nursing shortage will be adequately addressed.

With regard to comparison of perceived stressor types in other South African studies, Govender (1995) in his study points out that 'workload' was identified as the greatest perceived source of stress. The second major stressor source was 'emotional issues related to death and dying'. However, it is interesting though, that the most frequently mentioned job areas which the nurses found particularly stressful in the study conducted by Nixon

(1995) were extremely high levels of work pressure, physical and verbal abuse from patients, their escorts and relatives, staff shortages, problems with doctors, lack of appreciation for their work, and having to perform tasks not trained for or capable of. Death and dying was the least perceived source of stress, which contrasts with general nursing stress research, which consistently identifies workload and emotional issues related to death and dying as being major stressors (e.g. Dewe 1987;1989; Gray-Toft and Anderson, 1981b; Hingley and Cooper, 1986; Hipwell et al 1989; Tyler and Cushway, 1992 and Tyler and Ellison, 1994).

Dewe (1989) suggest that the reported high levels of workload as a stressor in many studies could be because it is something most nurses believe can and should be dealt with. Because little is done to resolve the overload, nurses find this difficult to accept with the result that such situations by their very nature become tense and exhausting. Therefore these nurses are probably resorting to the following coping strategies; confronting coping, escape avoidance, planful problem-solving and positive reappraisal. These findings are supported by Tyson et al (2004); Lee (2003) and Lambert et al (2004).

5.3.1 WORKLOAD

Looking at the different individual sources of stress, workload, “not enough staff to adequately cover unit was seen as the greatest source followed by “too many non-nursing tasks required, such as clerical work; “not enough time to provide emotional support to a

patient were cited most frequently in this study. These findings are supported by Scholey (1983).

Regarding ‘too many non-nursing tasks required, such as clerical work’ does not differ with Blay et al (2002). Blay et al (2002) point out that 60% of the oncology nurse’s time is spent upon indirect nursing activities of which general administrative tasks that should and could be performed by less skilled staff form of a large component of nurses work time. The study findings suggested that multidisciplinary conferences and team meetings could effect communication and reduce the number of individual staff liaisons. Similarly, computerization of patient notes could potentially decrease duplication and hence reduce time writing up charts while solving the Radiation Oncology problem of mislaid files. Evans and Carlson (1992) suggest strategies such as improving working conditions and nurse physician collaboration to reduce workload and to deal with the nursing crisis.

In South Africa, Bergman (2003) suggests that the use of a Nursing Bank in Mowbray Maternity has been successful for the service to resolve the extreme shortage of nurses. The Nursing Bank enrols the hospital’s own nurses in an agreement, which allows them to be paid what the agency would have paid, plus half the saving from the fee and VAT. This author argues that this is a benefit and an incentive to get the nurses back “home” and the hospital saves 12%. Bergman also examined the use of non-nurses to assist with other tasks. Results suggested that the employment of ward assistants and breast feeding consultants was a success. The function was to perform the tasks that nurses are doing which prevents them from doing nursing work. Breast feeding consultants provide a focus

on breast feeding throughout the hospital, working with both staff and newly delivered mothers to support breastfeeding (Bergman 2003).

5.3.2 DEATH AND DYING

Death and dying was perceived as the second greatest source of stress. These findings are consistent with those of Hipwell et al (1989). Hipwell et al (1989) point out that nurses who have to deal with dying patients may feel inadequately prepared to cope and sometimes report even higher levels of stress from this source than from workload.

Research has shown that many nurses and nursing students have difficulty dealing with death (Payne et al 1998, Servaty et al 1996, and Waltman and Zimmerman 1992, Thompson 1995 and Brockopp et al 1991. The study conducted by Mallory (2003) indicated that nursing students' attitudes toward care of dying were improved after an educational component in palliative care. This was consistent with previous research that showed that education does have a positive effect on nurses attitudes towards care of dying (Brent et al 1991, 1985, Durlak and Reisenberg 1991, Frammolt 1991, Kaye et al 1994 and Lev 1986).

Quint (1967) suggested that nursing students exposed to dying patients but lacking education in how to care for the dying experienced death anxiety and negative attitudes toward care of the dying, eventually withdrew from caring for the dying. Quint (1967) also theorized that if nursing students were to receive systematic death education with

planned assignments, they would develop positive attitudes toward dying and be less likely to withdraw from care of dying.

Research into the effectiveness of various educational programmes in death education as highlighted by Mok et al (2002) presents many challenges. Nurses have benefited from the programme in the areas of change in attitudes, increased self-awareness, having a positive attitude towards death and dying and acquiring the knowledge and psychosocial skills in providing culturally sensitive care for dying patients.

The support study conducted by Kuebler et al (2005) published the finding of a major intervention trial aimed at improving care for serious illness through better information and decision-making. The investigators believed that patient-level decision-making would lead to improved care and outcomes through better decision-making.

5.4 WAYS OF COPING

The findings in this study suggest that registered nurses seem to be resorting more to positive appraisal (mean-1.99, n=76), planful problem-solving (mean=1.82, n=82) and seeking social support (mean=1.47, n=81) strategies. Escape avoidance as a coping strategy seems to be employed the least. Cox (1991) contends that indications from the existing literature seem to suggest that if a time based analysis is made then avoidance strategies should be more beneficial in the initial stages of coping and problem-focused strategies at the latter stages. He further argues that no one coping function is seen as

more adaptive as any other. Rather a successful outcome is engineered by the individual fitting the right strategy to the situation.

As hypothesized, high scores on the Nursing Stress Scale will correlate with low scores on the ways of coping checklist. These findings concur with previous studies indicating that the better the use of coping strategies, the less frequently job stress is experienced and, most importantly, the better the perceived health status (Lee, 2003).

5.5 PERCEIVED SOURCES OF STRESS, COPING STRATEGIES AS A FUNCTION OF A WARD/UNIT

No significant difference in terms of work area on sources of stress ($p=>0.05$) was found except for death and dying and conflict with Physician, Nurses & Supervisors ($p=<0.05$). This is similar to evidence in a study by Harry (1986) of ICU nurses. Harris (1986) found minimal difference between ICU and non-ICU surgical nurses on stress perception and anxiety, except that ICU nurses experienced significantly more job-related sensory deprivation than non-ICU nurses. Hipwell and Tyler (1989) found little difference between specialized units (coronary care unit and renal unit) and non-specialized units (geriatric ward and general-medical ward) in the degree of stress experienced. These findings are supported by a number of studies (for example: Alexander et al 1982; Leatt & Scheck 1980; Dear et al 1982; Mohl et al 1982; Nichols et al 1981; Maloney & Bartz

1983; Mc Craine et al 1987; Keane et al 1985; Cronin-Stubbs & Rooks 1985; Chiriboga & Bailey 1986 and Wakefield et al 1988).

Despite a non-significant overall difference in stress scores across the units, examination and comparison of individual units using the multiple comparisons analysis did present some interesting and significant findings. Nurses in the Intensive Care Units scored somewhat higher on the Nursing Stress Scale (mean 1.51, $p<0.05$). Cole et al (2001) points out that intensive care units are registered as most stressful areas both for patients and nursing staff. Comparisons of perceived sources of stress particular to the different units indicated the Intensive care units and Medical wards scored significantly higher on emotional issues related to death and dying as compared to theatre. This could be possibly be as a result of the perceived sense of responsibility especially characteristic of professional nurses towards their patients' well being (Mc Connel 1982). This finding is supported by Mallet et al (1991) in their comparative study of critical care and hospice nurses and Caldwell and Weiner's (1981) review of studies of ICU environments. Tyler and Cushway (1991) point out that in such units the patient is totally dependent on the nurse physically and psychologically over lengthy periods of time. This, accompanied by high death rates (Hipwell et al 1989) is a severely distressing experience for such nurses. However according to Tyler and Ellison (1994) theatre rarely has to deal with patients and their relatives. This result is also supported by Firth and Britton (1989) and Tyler and Ellison (1994). Cole et al (2001) suggests that the stress associated with caring for the dying patients may result because Intensive care units have traditionally focused on providing care to the living, with often dramatic efforts to preserve life. Cole et al (2001) further argues that the intensive care nurse are predominantly socialized into the role as

people who maintain and improve the lives of their patients, and stress results when they are unable to meet this expectation.

This finding is in contrast with Dewe (1985), who argues that medical wards experience a variety of stressors more frequently in comparison to critical intensive units. He also adds that “these wards because of the range of care required and the variety of duties and expectations, dual lines of authority develop between the medical and administrative system placing conflicting and often multiple demands on the nurse.

As hypothesized that high scores on the Nursing Stress Scale did correlate with low scores on the ways of coping checklist. This finding concur with previous studies (Lee 2003 and Callaghan et al 2000) indicating that the better use of coping strategies, the less job stressed experienced and most importantly, the better the perceived status.

The findings of this study indicate that registered nurses in Medical wards experience high level of stress from a lack of adequate support or opportunities to participate in making decision directly affecting their patients. This result is supported by (Tyson and Pongruengphant 2004). With increasing level of stress, these nurses more frequently utilized problem solving, confronting coping, distancing and escape avoidance.

With regard to Intensive Care Unit, the greatest perceived source of stress is emotional issues related to death and dying (mean=1.83, n=11) followed by conflict with Physician, Nurses and Supervisors (mean=1.37, n=13). Studies therefore also point to critical care unit nurses experiencing stressors associated with death and dying (Hipwell et al 1989,

Ogus 1992, Mallet et al 1991). In this study these nurses also indicated this to be a major source of stress in comparison to other units. The Intensive Care unit scored low in coping strategies (mean=1.29, n=13). This provides some evidence for the hypothesis that high scores will correlate with low scores on the ways of coping checklist.

With regard to sources of stress by type of unit, the present study results indicated that Intensive Care unit scored significantly higher on 'emotional issues related to death and dying' as compared to Maternity (p-value=0.026) and Theatre (p-value=0.010). This finding results is supported by Hipwell et al 1989, Ogus 1992 and Mallet 1991. Medical wards scored significantly higher on 'emotional issues related to death and dying' as compared to Maternity (p-value=0.019) and Theatre (p-value=0.006). Intensive Care units also significantly scored higher on conflict with physician, nurses and supervisors as compared to Trauma and Emergency units (p-value=0.008) and Maternity (p-value=0.007). An argument emerges from this research as proposed by Dewe (1989). There is little empirical support for the belief that Intensive Care unit nurses suffer more frequent stress than non-intensive care nurses. However, in comparison to the Govender (1995) study findings, indicated that Trauma unit scored significantly higher on 'emotional issues related to death and dying' as compared to Theatre (f=3.70, p=<.05). Govender (1995) further argues that this could possibly be as result of the perceived sense of responsibility especially characteristic of professional nurses towards patient's well being. With regard to general ward environments,in Govender's (1995) findings the Medical ward scored significantly higher than the Critical Care units, general Surgical units and Theatre on lack of staff support (f=4.6047, p=<.05) and significantly higher than Theatre on 'nurse conflict' (f=3.70, p=<.05). In response to the stressors in the

current study registered nurses in the Medical wards are resorting to all coping strategies (Table 17).

5.6 NURSING STRESS IN SOUTH AFRICA

The findings of this study, as discussed earlier with regard to perceived sources of stress amongst the registered nurses are similar to the findings of a study conducted by Govender (1995) in Pietermaritzburg using the Nursing Stress Scale, which also identified workload as the most cited source of stress (mean=1.99, n=72) followed by emotional issues related to death and dying (mean=1.48, n=72). Nixon (1993) obtained similar results in the sample of hospital nurses in the Western Cape. These results suggest that high levels of work pressure, diminished physical comfort, and lack of peer cohesion predicted higher levels of emotional exhaustion. Regarding coping, frequent use of the problem-focused strategy of planning was found to be associated with lower levels of emotional exhaustion and depersonalization (Govender 1995).

A study by Pope (1999) indicated that job-related stress amongst intensive care nurses was experienced due to matters such as impaired communication with management, racial discrimination in the workplace, lack of professional recognition of nurses demonstrated in the inequitable and uncompetitive remuneration, insensitivity to their professional needs, a non-conducive physical environment and emotional and spiritual stress in the working environment (Pope 1999).

Molefe (1994) studied stress in nursing students in Johannesburg, South Africa. They showed many similar results to this study, but also found additional stressors specific to nursing students, and raised an additional concern that they found student nurses suffer stress and depression as a result of negative experience of violence. They argue that these experiences cover the internal environment: disturbed learning opportunities, lack of concentration, inability to study, poor patient care, malnutrition, suppression, unavailability of medical attention, identification, withdrawal, fear, anger, sadness, blame, compassion, unfairness, self-judgement and lack of trust. The external environment: loss of lives, high failure rate, overcrowding, lack of equipment, deterioration of health standards, no educational support, lack of transport, unemployment, strained relationships, lack of freedom and family disorganization; as well as patterns of interaction between the internal and external environment: poor communication patterns, intimidation, different ethnic dialects and apathy (Molefe 1994).

Gontsana (1999) also studied student nurses during their first placement in a psychiatric unit and identified sources of stress, including, among others: ineffective teaching and learning programmes, poor managerial governance of the service, detachment of professional nurses from their teaching role, poor relationships among staff, over reliance on the medical model of care and patient neglect.

Matlakala (2003), in attempting to provide an explanation for findings in his study, contend that registered nurses who completed the Diploma in Critical Care Nursing encountered both positive and negative experience. Positive experience included rotation to different hospitals, exposure to different ways of managing of patients, exposure to

different types of equipment to provide nursing care (that is not available in their hospitals of employment) and being able to correlate theory with practice. Negative experience included amongst others shortage of staff which led to misuse of the students and not meeting their learning objectives, exhaustion from work and travelling, exploitation by permanent staff, shortage of equipment and supplies in some hospitals, poor accompaniment due to lack of preceptors or preceptors allocated to patients and not able to attend to students, and staff's negative attitudes towards students.

While nursing students are a different population from the nurses in this study who were much more experienced, the above studies represent some of the research on stress found in South Africa, and demonstrate a similar picture of working conditions faced by all nurses which leads to stress in the workplace.

5.7 CONCLUSION

The most important finding of this study was that the frequency of the reported stress in registered nurses was high enough to be considered serious. The frequently reported source of stress appeared to be 'workload' followed by 'emotional issues related to death and dying'. The least frequently reported source of perceived stress was conflict with other nurses.

It appears that comparative studies between hospital units do not overwhelming confirm that one type of unit is more stressful than another. There was no significant difference in

terms of work area overall on sources of stress except death and dying and conflict with Physician, Nurses and Supervisors.

Multiple comparison analysis did reveal some interesting differences across units. Regarding perceived sources of stress amongst nurses in the different units/wards, it seems that Intensive Care units and Surgical wards were associated with more frequent stress than Medical wards. Maternity appeared to have a lower frequency of reported stress. Medical wards and Intensive Care units scored significantly higher frequency on emotional issues related to death and dying as compared to maternity. Registered nurses in the Medical wards experienced high frequency of stress from lack of adequate support or opportunities to participate in making decision directly affecting their patients.

Furthermore nurses were employing more frequently problem solving, confronting coping, distancing and escape avoidance. There was no significant difference in frequency of coping strategies in terms of work area except escape avoidance. The findings of the study suggest that nurses use adoptive coping strategies in dealing with their work stress as displayed by their use of planful problem-solving. As hypothesized, high scores on the Nursing Stress Scale did correlate with low scores on the Ways of Coping Checklist.

5.8 LIMITATIONS

The major limitation of this study was that it represented registered nurses in only one tertiary institution owing to the sampling technique chosen (i.e. convenient sampling).

The sample size for different units/wards were not balanced. The small sample size (n=84) unearths a further limitation. The results therefore need to be considered with caution as they are not generalisable. Although this was a relatively small-scale study it did highlight pertinent issues locally in relation to registered nurse stress.

5.9 RECOMMENDATIONS

The following are the recommendations from this study. The recommendations are made with specific reference to nursing research, nursing education and nursing practice.

5.9.1 Recommendations related to research

The present study has identified the possible causes and frequency of stress experience by registered nurses working in a tertiary hospital. It does not measure the intensity of stress experienced. Future research should be directed at the intensity dimension using physiological measures of stress.

Replication of the study to include comparison with other tertiary hospitals, as well as different levels and locations of hospitals (secondary or primary, urban or rural, etc.).

Qualitative research could be used to explore and describe the experiences of registered nurses in the work environment.

Future research on effects of stress management.

5.9.2 Recommendations for nursing education

As highlighted in the Government Gazette (1997), education and training programmes should be aimed at recruiting and developing personnel who are competent to respond appropriately to the health care needs of the people they serve. Education and training should comprise relevant, reality-based curriculum which are aimed at attaining competence within the psychomotor and affective domain of education objectives, should provide comprehensive, integrated, community problem based health care delivery education for competent practice within a multidisciplinary team ideology; and should be coordinated, reviewed and rationalized to meet the health needs of the country. An educational component in palliative care as suggested by Mallory (2003) results in an increase in positive attitudes toward care for the dying. Palliative care at the end of life is an example of a subject through which an adult learner could have a transformative learning experience. This author mentioned seven critical nursing behaviours in care for the dying are as follows: (1) responding during the death scene; (2) providing comfort; (3) responding to anger; (4) enhancing personal growth; (5) responding to colleagues; (6) enhancing the quality of life during dying; and (7) responding to the family.

5.9.3 Recommendations related to nursing practice

The findings of the study suggest that nurses use adoptive coping strategies in dealing with their work stress as displayed by their use of planful problem-solving. It would appear that organizational interventions at reducing the impact of stressors such as workload (that is, providing more staff to adequately cover unit might be more appropriate and may benefit some staff more than stress management).

Employing more registered nurses is an obvious potential remedy for reducing workload, however as noted in the introduction there are many open posts in the public sector which have not been filled, suggesting that more nurses may not be available. Increasing Enrolled Nurses and Enrolled Nurse Auxiliaries and the efficient use of them to perform functions within their scope of practice such as taking patients temperature, blood pressure will allow the Registered Nurses to concentrate on their functions. Increasing clerical staff to reduce non-nursing tasks, and employing complementary staff such as breast-feeding consultants to support midwives, and formulation of Nursing Bank, as suggested by (Bergman 2002) present a model for locally relevant solutions to this crisis.

Although it may not be possible to decrease the demands of the job some issues could be addressed in the first instance by providing support and improving working conditions and counselling services after stressful events (i.e. debriefing sessions) and stress management training are amongst the approaches suggested throughout the literature as being beneficial in reducing the nurse's stress levels (Beeston 1991, Kennedy and Grey 1997). Managers can lessen stress levels of subordinates by adopting the following strategies as suggested by (Booyens 1998:149-152)

- Developing systems for effective two-way communication.
- Clarifying role and performance expectations.
- Promoting prompt, constructive resolution of conflicts.
- Psychological counselling and therapy should be easily accessible and available for troubled staff members.

- Continuing education and staff development should be promoted. Increased skill training, even for those personnel who are more experienced, pays by leading to a reduction in levels of stress, turnover and better performance. Career development and growth should also be actively promoted. A programme of job enrichment that is matched to the individual's goals and desires could also promote development of self-worth.
- The manager should endeavour to increase her observational skills in order to detect increased stress levels or signs of burnout among her personnel in the early stages and in order to identify the sources of stress and to reduce or eliminate them.
- Policies that reduce stress from shift work should be developed. These could include reducing the number of hours of the night shift, increasing rest time between shifts, providing adequate meal times, and providing a fair distribution of weekend and holiday work.
- Support group for nursing personnel is recommended.
- A health care support programme for employees suffering from problems with substance abuse, weight, diabetes, or hypertension is helpful.
- Nutritional support should be considered for employees, including weight control classes with group support and follow-up, and information regarding the calorie, sodium, and cholesterol content of food.
- Health fitness programmes comprising screening for health risk factors such as cardiovascular problems could be provided, as well as fitness classes (Booyens 1998).

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APPENDICES

Rank :

Work area :

Years of experience :

SECTION 1: For each statement below indicate by means of a (×) how often in your present unit you have found the situation to be stressful.					
NO	STATEMENT	VERY FREQUENTLY 3	FREQUENTLY 2	OCCASIONALLY 1	NEVER 0
1.	Performing procedures that patients experiencing as painful				
2.	Feeling helpless in the case of a patient who fails to improve				
3.	Listening or talking to a patient about his /her approaching death				
4.	The death of a patient				
5.	The death of a patient with whom you developed a close relationship				
6.	Physician not being present when a patient dies				
7.	Watching a patient suffer				
8.	Criticism by a physician				
9.	Conflict with a physician				
10.	Fear of making a mistake in treating a patient				
11.	Disagreement concerning the treatment of a patient				
12.	Making a decision concerning a patient when a physician is unavailable				
13.	Feeling inadequately prepared to help with emotional needs of a patient's family				
14.	Being asked a question by a patient for which I do not have a satisfactory answer				
15.	Feeling inadequately prepared to help with the emotional needs of a patient				

NO	STATEMENT	VERY FREQUENTLY 3	FREQUENTLY 2	OCCASIONALLY 1	NEVER 0
16.	Lack of opportunity to talk openly with other unit personnel about problems in the unit				
17.	Lack of opportunity to share experiences and feelings with other personnel in the unit				
18.	Lack of opportunity to express to other personnel in the unit my negative feelings toward patients				
19.	Lack of support system available in the hospital				
20.	Conflict with a supervisor				
21.	Relieving in another units that are short-staffed				
22.	Difficulty in working with a particular nurse outside the unit				
23.	Criticism by a supervisor				
24.	Difficulty in working with a particular nurse in the unit				
25.	Breakdown of computer				
26.	Unpredictable staffing and scheduling				
27.	Too many nonnursing tasks required, such as clerical work				
28.	Not enough time to provide emotional support to a patient				
29.	Not enough time to complete all my nursing tasks				
30.	Not enough staff to adequately cover unit				
31.	Not getting the scarce skill allowance				
32.	Inadequate information from a physician regarding the medical condition of a patient				

NO	STATEMENT	VERY FREQUENTLY 3	FREQUENTLY 2	OCCASIONALLY 1	NEVER 0
33.	A physician ordering what appears to be inappropriate treatment for a patient				
34.	A physician not being present in a medical emergency				
35.	Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment				
36.	Uncertainty regarding the operation and functioning of specialized equipment				

SECTION 2: For each statement below indicate with an (x) how often you use each of the following to manage stressful events in your work/job.

NO	STATEMENT	USED A GREAT DEAL 3	FREQUENTLY USED 2	USED SOMETIMES 1	NOT USED 0
37.	I did something which I didn't think would work, but at least I was doing something				
38.	Tried to get person(s) responsible to change his or her mind				
39.	I expressed anger to the person(s) who caused the problem				
40.	I let my feelings out somehow				
41.	Took a big chance or did something very risky				
42.	Stood my ground and fought for what I wanted				
43.	Went along with fate; sometimes I just have bad luck				
44.	Went on as if nothing had happened				
45.	Looked for the silver lining, so to speak; tried to look on the bright side of things				

NO	STATEMENT	USED A GREAT DEAL 3	MOSTLY USED 2	USED SOMETIMES 1	NOT USED 0
46.	Tried to forget the whole thing				
47.	Didn't let it get to me;refused to think about it too much				
48.	Made light of the situation; refused to get too serious about it				
49.	I did not want to come to work				
50.	Tried not to burn my bridges, but leave things open somewhat				
51.	I tried to keep my feelings to myself				
52.	I tried not to act too hastily or follow my first hunch				
53.	Kept others from knowing how bad things were				
54.	I tried to keep my feelings from interfering with other things too much				
55.	I went over in my mind what I would say or do				
56.	I thought about how a person I admire would handle the situation and used that as a model				
57.	Talked to someone to find out more about the situation				
58.	Accepted sympathy and understanding from someone				
59.	I got professional help from work				
60.	Talked to someone who could do something concrete about the problem				
61.	I asked a relative or a friend I respected for advice				
62.	Talked to someone about how I was feeling				
63.	Criticized or lectured myself				
64.	I apologized or did something to make up				

NO	STATEMENT	USED A GREAT DEAL 3	MOSTLY USED 2	USED SOMETIMES 1	NOT USED 0
65.	Realized I brought the problem on myself				
66.	I made a promise to myself that things would be different next time				
67.	Hoped a miracle would happen				
68.	Slept more than usual				
69.	Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, and so forth				
70.	Avoided being with people in general				
71.	Took it out on other people				
72.	Refused to believe it had happened				
73.	Wished that the situation would go away or somehow turn out				
74.	Had fantasies or wishes about how things might turn out				
75.	Just concentrated on what I had to do next-the next step				
76.	I made a plan of action and followed it				
77.	Changed something so things would turn out all right				
78.	Drew on past experiences; I was in a similar situation before				
79.	I knew what had to be done, so I doubled my efforts to make things work				
80.	Came up with a couple of different solutions to the problem				
81.	I was inspired to do something creative				
82.	Changed or grew as a person in a good way				
83.	I came out of the experience better than when I went in				
84.	Found new faith				

NO	STATEMENT	USED A GREAT DEAL 3	MOSTLY USED 2	USED SOMETIMES 1	NOT USED 0
85.	Rediscovered what is important in life				
86.	I changed something about myself				
87.	I prayed				

Dear Registered nurse

I would like to conduct a study on stress and coping strategies amongst registered nurses in a hospital setting.

You need not reveal your identity when completing the questionnaire, and therefore all your responses are confidential. The only information that you need to fill in that could identify you, is your rank, work area and your years of experience. However no names will be used .Your participation in the study is voluntary. There is no risk to you for participating other than use of your time. You may decide to stop participating. There is no consequence for non-participation or if you decide to stop participating.

Instructions for Completing Questionnaire
You are requested to complete the questionnaire comprises of 87 statements. The first 36 statements are a list of situations that commonly occur in a hospital unit. For each statement indicate by means of a (×) how often in your present unit you have found the situation to be stressful. The range from which you can select your response is as follows:

- Very frequently 3
- Frequently 2
- Occasionally 1
- Never 0

The last 51 statements are a list of statements about cognitive and behavioral efforts to manage a specific stressful event. The range from which you can select your response is as follows:

- Used a great deal 3
- Mostly used 2
- Used sometimes 1
- Not used 0

Instructions for Return of Questionnaire
Once you have completed the questionnaire please place it in the plain white envelope provided and seal it. If you do not wish to participate, please place the blank questionnaire in the plain white envelope provided and seal it. I will collect it from you at the end of your nursing shift.

If you have previously completed a questionnaire, please do not complete the questionnaire again, just let me know that you have previously participated and return the blank questionnaire and envelope.

I look forward to your participation, and thank you for completing the questionnaire.

Vatiswa V Makie (Miss)
MCurr student