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Faculty of Community and Health Sciences  
RESEARCH THESIS

**Title:** **Experiencing Night Shift Nursing: A Daylight View**

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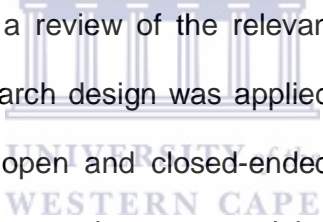
24-hour society



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## **ABSTRACT**

This study focuses on nurses who work the night shift, and on some of the aspects of their lives. A question sometimes asked at the tertiary hospitals is 'What are the experiences of nurses who work night shift?' This thesis attempts to answer this question. The objectives of the study were to identify and describe these experiences with specific reference to the physical (bodily), social and work-related effects.



In the course of this study a review of the relevant literature was undertaken, and a quantitative descriptive research design was applied. A structured questionnaire using the Likert scale, with both open and closed-ended questions was used. The study population consisted of all nurses who were on night duty (i.e., 320). Three hundred and nineteen nurses accepted the questionnaires, with 286 responding. A panel of 'experts' was used to test the validity of the questionnaire, while the test-retest method was used to test the questionnaire's reliability. The quantitative data were analysed manually and with the assistance of a Microsoft Excel computer program. The comments from the open-ended questions were used to illustrate qualitative findings. Appropriate authorisation was sought from participants, the ethical committees of the two universities<sup>1</sup> and the designated public hospital. The participants were informed of their right to withdraw at any point in the study process. To ensure anonymity and confidentiality, the

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<sup>1</sup> Two universities were involved, as the hospital where the study was conducted has a 'Research and Ethics' committee jointly with its affiliated university, which was a different university from the one at which the researcher of this study was registered.

names of participating nurses were not used. Sleep disturbances, conflict between the respondents and their families, the need for child-minder facilities and enhanced feelings of stress and isolation were found to be major complaints. The period from 03h00 to 4h00 was found to be the worst physically. A general feeling prevailed, in which the quality and value of night nursing were not perceived to be less than those of day duty. Recommendations included: (1) Nurses have to be prepared for the physical and social demands of night shift, and (2) The 03h00 to 04h00 'worst period' has to be attended to; the recommendation that more 'breaks' be made at more frequent intervals would need to be considered. This study found that, despite the risks (some of which included experiencing more stress and receiving less support) associated with night duty, there are still some nurses to whom this shift appeals.



## DECLARATION

I declare that 'Experiencing Night Shift Nursing: A Daylight View', is my own work, that it has not been submitted for any degree or examination to any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.



Full name.....

UNIVERSITY of the  
WESTERN CAPE

Date:.....Signature.....

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First and foremost, I would like to give honour and thanks to Almighty God for giving me the strength to pursue this project and carrying me through. I sincerely thank my husband Malcolm for his tremendous assistance. His unwavering love and support has enabled me to come this far. I am also very grateful to Jason for his knowledge and assistance with this research study. I thank André for the many tedious little tasks I would lean on him to do and Robyn for the assistance with the referencing. For moral support, my special thanks go to Bronwyn, Gerald and Monique for their caring and encouragement by always enquiring and being there for me. The smiles of Joshua and Micaiah kept me focused.



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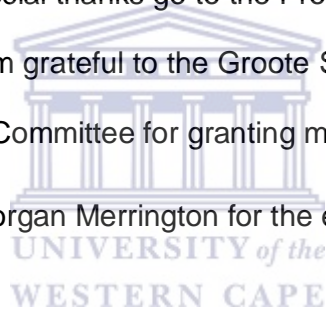


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## DEDICATION

This work is dedicated to Mrs Grace Beatrice Swartz, my late mother-in-law,  
who assisted me tremendously in her lifetime by giving  
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in my 'Early years of Nursing'  
without which I would not have been able to achieve  
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## ABBREVIATIONS

BCEA	Basic Conditions of Employment Act
DDN	Deputy Director: Nursing
GSH	Groote Schuur Hospital
ICU	Intensive Care Unit
NMC	Nurse Manager Committee
OT	Operating theatre
SANC	South African Nursing Council
UK	United Kingdom
USA	United States of America
UWC	University of the Western Cape
TOP	Termination of pregnancy
TTP	Time to pregnancy [Refers to the number of menstrual cycles required to conceive. It is used to estimate the ability to achieve pregnancy]

- For the purposes of this thesis the words 'she' or 'her' is used for convenient reading, however it applies to both genders
- Use has been made of the following abbreviations in respect of some of the graphs namely SA (Strongly agree), A (Agree), D (Disagree) and SD (Strongly disagree).

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## Chapter 1

### ORIENTATION TO THE STUDY

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#### 1.1 INTRODUCTION

Call them

*'Cinderallas of Nursing,*

*Ladies with Lamps*

*or Night Nurses'*

Despite the oblique reference to Florence Nightingale in the second line above this designated group has often been seen as step-children of nursing. They have been perceived as being out of touch with what is happening in the real nursing world. They have also been referred to as non-career orientated and unmotivated, scared of managerial duties, and sometimes also called knitters and baby sitters.

*'There has, of course, always been some non-daywork in societies of any size. Bakers, policemen, and firemen have long had to work or be "on call" during the night'* (Mott, Mann, McLoughlin & Warwick, 1965:1). It was because of these misconceptions and perceptions that the researcher set out to investigate night-nursing experiences.

Chapter one is an overall orientation to the study. It is similar to the original proposal that served as a blueprint for the execution of this



study. The study focuses on nurses who work the night shift and some of the aspects about their life (physical and social) and work experiences while doing this shift.

Health professionals, inclusive of nurses and support staff, are needed to do night and shift work, which are those hours outside of the traditional Monday to Friday, 08h00–17h00 service requirements.

**1.1.1 Background to the study**

The researcher, allocated to night duty at a tertiary hospital in the Western Cape, thought it opportune to embark on this study because of her proximity to the working of night shift and the interest in the subject. In the Western Cape, as far as the researcher could determine, the 24 hours of a day are worked predominantly by two shifts – a day and a night shift. When working the day shift, a nurse would generally commence duty at 07h00. The duration of the day shift could vary from five to twelve hours, with the requirement that night shift is worked for 12 hours, from 19h00 to 07h00 (Nurse Manager Committee, 2004).

At the hospital where the study was conducted, the night shift time for nurses was also worked from 19h00 to 07h00, with a thirty-minute meal-break. In South African legislation, the Basic conditions of Employment Act (BCEA) stipulates that ‘An employer must give an employee who works continuously for more than five hours a meal interval of at least

one continuous hour' (Republic of South Africa, 2001:18). It does stipulate, however, that should there be a desire to reduce the duration of the break, an agreement between the employer and the employee could be made, and the meal-break duration may then be 30 minutes (Republic of South Africa, 2001:18).

In public hospitals in the Western Cape, about one third of the total number of nurses at the in-patient services is allocated to work the night shift (Nurse Manager Committee, 2004). The total number of nurses in the Western Cape was 25 315 in 2004, six months prior to the commencement of this study (South African Nursing Council, 2004). The public hospital selected for this study had a total nursing establishment of 1 514, of which 1 361 nursing posts were filled. At the time of the study, approximately 23 per cent of the nursing population at this hospital were on the night shift (Groote Schuur Hospital Persal Establishment report, 2004).

### **1.1.2 Research setting**

The study was conducted with night nurses at a tertiary public hospital in the Western Cape. The hospital had an in-patient (24-hour) service area with a capacity of 940 beds. The in-patient service facility comprised six major clinical areas: (1) Medical, (2) Surgical, (3) Trauma and Emergency, (4) Obstetrics and Gynaecology, (5) Intensive Care and (6) Operating theatres.

**1.1.3 Significance of the study**

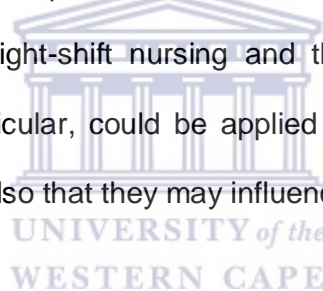
Slon (1997:106) reminds us that day shift is a natural phenomenon:

***‘We are creatures of the light. We sleep by night, awake with the sun, and go about our business during the day. As the sun slides into the west, our bodies begin to wind down in preparation for sleep and the rest we need.’***

This is applicable to the majority of today’s society; however it cannot be applied to all, as we now find ourselves living in a 24-hour day society. It is estimated that, in industrialised countries, the segment of shift workers could be approximately 20 per cent of the working people (Niedhammer, Lert & Marne, 1994:667). Many people worldwide organise their lives differently, as they have to live on the ‘other side of the clock’; they are the shift workers who have to keep the 24-hour society alive. As a result, they sleep during the day and at night they labour to keep factories, all-night supermarkets and hospitals in operation (Slon, 1997:106).

The researcher’s awareness of the experiences of night shift nursing increased sharply after she was appointed to a permanent night shift nursing post roughly two years prior to this study. Activities, whether of an official, social, developmental, public relations or other nature, offered

at places of work such as hospitals, are predominantly geared for day workers and day nurses, despite nursing being a 24-hour job. Therefore, to obtain an objective view, the implementation of this scientific study on the subject of 'Night Shift Nursing' was envisaged to be useful. It is thus the researcher's opinion that this study is significant as the research question that is asked in this study will focus in the following chapters on what the night shift experiences involve for these 'night-nurse' shift workers – a study that could possibly serve as a prelude to further investigations to determine other aspects of night-shift nursing. It is hoped that the results of this study may lend renewed insight into night-shift nursing and that the recommendations of this study, in particular, could be applied to the management of night-shift nursing and also that they may influence evolving policy on this subject.



**1.1.4 Research question**

The research question may be stated as follows: 'What are the experiences of nurses who work the night shift, with reference to (1) the physical (bodily) aspects, (2) the social aspects and (3) the work-related aspects?'

**1.1.5 Objectives of the study**

The overall goal of the research is to investigate the experiences of nurses doing night shift nursing at a large tertiary hospital, in the Western Cape of South Africa. The objectives are to describe these experiences of night-shift nursing in an attempt to gain improved

understanding and insight about the phenomenon of night-shift nursing, as well as to place the researcher in a position to make recommendations based on the knowledge gained from this study. These recommendations could be further utilised by fellow scholars, policy makers, managers and others from various applicable areas to improve the environment of night nurses, be it the physical or psychological environment.

The objectives of this study are thus:

1. To identify the experiences of nurses doing night shift and
2. To describe the experiences of nurses doing night shift, in relation to the following aspects:
  - physical (bodily) effects,,
  - social effects, and
  - work-related effects.

## **1.2 LITERATURE REVIEW**

It is well established that nursing was done amongst the earliest people, with women protecting and caring for children, the sick, elderly members of the family and neighbours throughout the night during periods of illness (Dolan, 1967:1). Yet indications are that nurses today doing night-shift work still have difficulty in having their work recognised as equally valued and viewed as equally important as that of day workers

(Brooks, 1999b:356; Hubbard, 1997:28).

A review of the relevant literature was undertaken to determine what the experiences of other night nurses were and what authors had previously said with regard to this topic. The literature review also assisted in establishing what the current thoughts regarding the physical, social and work-related effects of night-shift nursing are. The literature study provided information regarding the

- background views on night-shift nursing,
- physical effects which relate to the night-shift nursing experience,
- social effects relating to the night-shift nursing experience, and
- work-related effects pertaining to the night-shift nursing experience.

### 1.3 DEFINITION OF TERMS

- **'Apartheid'**: An operational description used by the Dutch, where social isolation/separation exists as a result of, in this instance, working the night shift.
- **Circadian** (cir-KAY-dee-an) **rhythm**: *Circa diem* is the Latin word for circadian which means 'about a day'. The circadian rhythm in humans is the natural cycle controlled by a powerful inner timing mechanism, that regulates sleep and wakefulness

and that directs the daily ebb and flow of bodily chemicals. It is the body's internal clock, which is reset each day by the rising sun and evening darkness (Quraishi, 2004).

- **Experiences:** For purposes of this study, the experiences relate to the physical (bodily), social and work-related actions, and events which encompass what the incumbent has seen, done, felt, and lived through – in this instance, night duty.
- **Experts:** Experienced scholars on a particular subject – in this case, senior nursing colleagues with night-shift nursing experience.
- **Night nurse:** Registered nurses, enrolled nurses or enrolled nursing assistants on the establishment of the designated hospital included both those who work full and part time on night duty. This group did not include the night nurses who were working overtime or those who were employed by an outside nursing agency.
- **Other side of the clock:** Those hours outside of the straight shift office hours of 08h00 to 17h00, alluding more so to night time.
- **Split-shift parenting:** Access to only one parent at a time due to parents working different or opposite shifts.
- **Sub-culture:** The customs, arts and conveniences exhibited as customary by the night nurses.

- **Subfecundity:** Inability to achieve a wanted conception or experience of a delay of one or more years before achieving conception.
- **Twenty-four hour economy:** The world of business that carries on for the 24 hours of the day.

(NB: 'Night shift' and 'night duty' are used interchangeably in this thesis.)

#### 1.4 OUTLINE OF THE STUDY

**Chapter 1:** Orientation to the study including the ethical considerations, definition of terms, outline of the study and abbreviations.

**Chapter 2:** A review of the relevant literature.

**Chapter 3:** The research methodology including design of the study, study population, criteria for participation, sampling procedure, data collection and data analysis procedure.

**Chapter 4:** Results of the data analysis.

**Chapter 5:** Discussion of the findings.

Limitations of the study.

Recommendations

Conclusion



**References**

**Appendices**



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## Chapter 2

### LITERATURE REVIEW

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#### 2.1 INTRODUCTION

The literature search was undertaken to assist in establishing what the current thinking was on the experiences of night nurses. The literature review embarked on, also assisted in establishing what the current trends are with regard to the night shift nursing experiences of nurses in relation to the physical, social and work-related aspects. The literature consulted frequently referred to shift work and shift workers in general; consequently in certain cases this has been applied to the night shift context for the purposes of this study. This chapter covers

- the background views on night shift ,
- the USA and UK experience,
- the physical effects relating to the night-shift nursing experience,
- the social effects relating to the night shift nursing experience,  
and
- the work-related effects relating to the night-shift nursing experience.

**2.2 THE BACKGROUND VIEWS ON NIGHT SHIFT**

**2.2.1 General**

Mott, as far back as 1957, wrote:

***'Few workers like shift work,  
many dislike it strongly,  
and many others have learnt to only live with it.'***

(Mott, Mann, McLoughlin & Warwick, 1965:23).

Slon, (1997:106), a pioneer writer on night work, refers to night-shift workers as people who 'live on the other side of the clock'. Daytime is their sleep time, while the night time is their toil time. These are the people of the night who slog at all hours to keep a 'twenty-four hour economy' breathing and active. They run factories, manage observatories, fight fires, work at newspaper and television stations and allow supermarkets to provide all-night services. This economy that never sleeps also keeps hospitals in operation.

Foulkard (in Arthur, 2000) supports the thought that there are differences between night-shift workers and daytime workers. He views the whole aspect of sleep and wakefulness, and night and day shift from a social order point of view, claiming that many people are forced to sleep and wake up at the wrong times due to the pressures of society. Foulkard (In Arthur, 2000) also advocates that people have to accept that they are members of a daytime species and that there are risks

associated when humans work night shifts.

Westfall-Lake and McBride (2000:25) express their concern about the shift workers and their safety and state that working shifts can be demanding. Crace (1999:26) argues that this economic demand which requires people to be away from their families at these 'odd' times for night work could result in adverse effects being experienced.

Monk (In Slon, 1997:106) says that those who have never worked night shift may have the perception that modifying ones' life in an attempt to adapt to night work might appear to be relatively simple – a quick change that would require a few days of adjustment. He argues, however, that this is a false perception as it was far from the reality and real truth of having to adjust from day to night duty. Monk (In Slon, 1997:106) also indicates that even those workers who choose to work night shift cannot really fully appreciate the challenges they are required to face. 'When you deliberately try to shift the 'sleep/wake cycle', it's like having a symphony with two conductors, each one beating out a different time...' (Monk, in Slon, 1997:106).

The writings of these specific authors extend over a period of 35 years. The question that frequently arises is whether night shift is liked or disliked. All the authors allude to the safety of the night worker and the risks associated with night shift.

Throughout, though, concern is expressed about the challenges that

night shift presents, with the night worker having to live a 'day and night' life. Other aspects also touched on by the authors include the adaptation, associated societal pressure, the '24-hour' economy and the 'sleep-wake' pattern.

The researcher specifically embarked on this study to investigate the experiences of nurses who work the night shift and to obtain some information on the subject, guided by the literature review which follows.

### **2.2.2 The USA and UK experience**

It has been determined that the segment of shift workers in industrialised countries is approximately 20 per cent of those people who work (Niedhammer, Lert & Marne, 1994:667). In America, one in every five persons (thus an estimated number of 15.5 million Americans) have been found to be shift workers (Slon, 1997:106; Institute of Industrial Engineers, 2002:66). According to Swift (2000:24), the US Bureau of Labour Statistics has indicated that the number of America's wage and salary employees who worked either evening or late night shifts equated to eight per cent. Nonetheless, this eight per cent was bound to increase because of the 'rising demand for round the clock production and twenty-four hour accessibility...' of needed services (Swift, 2000:24).

The world of night workers and night work has gained scores of new members ranging from factory workers, security guards, police officers and nurses (Sirois, in *Work and Family Newsbrief*, 2000:7).

In the United Kingdom, a prediction was made with regard to the number of people who work between the hours of 21h00 to 23h00, and 02h00 to 05h00. The projection indicated that the amount of people working during these times would have increased, by doubling from 'over 1 million in the former period, to more than 300,000 in the latter period by 2007' (Crace, 1999:26).

**2.2.3 Women and graduates**

A survey conducted in a general study on night workers in 39 public hospitals in Paris and surroundings by Estryn-Behar, Gadbois, Peigne, Masson and Gall (in Costa, Cesana, Kogi & Wedderburn, 1989:89) found that the proportion of women in hospital on night-shift duty (74%) varied slightly from that on day-shift duties (77%). Their study found four 'important' distinct groups in terms of gender and qualifications in night-shift careers in the hospitals studied. These are set out in table 2.1 below.

**Table 2.1: Night workers in public hospitals: Experience in years**

<b>Gender</b>	<b>Graduates / Auxiliaries</b>	<b>Less than four years' experience</b>	<b>More than 10 years' experience</b>
<b>Female</b>	<b>Graduates</b>	68%	7%
	<b>Auxiliaries</b>	52%	21%
<b>Male</b>	<b>Graduates</b>	60%	10%
	<b>Auxiliaries</b>	60%	10%

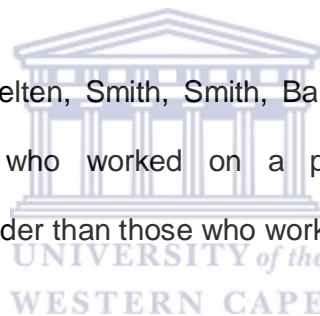
Source: Estryn-Behar et al., in Costa, Cesana, Kogi & Wedderburn, 1989:89

**2.2.4 Age and experience**

Estry-Behar et al. (in Costa, Cesana, Kogi & Wedderburn, 1989:90) found that the hospital auxiliary workers were older and that one in eight graduates were aged over 40 years (both men and women), whereas the corresponding proportions for auxiliaries were one in five for men and one in two for women. Estry-Behar et al. (in Costa, Cesana, Kogi & Wedderburn, 1989:89-90) also found that hospital personnel generally on the night shift were young: 80 per cent were younger than 40 years, and 50 per cent were between 30 and 40 years.

Totterdell, Spelten, Smith, Smith, Barton and Folkard (1995:43) found that nurses who worked on a permanent night schedule were significantly older than those who worked on a rotation system.

In the ethnographic study conducted by Brooks (1999b:354), it was found that the age profile and experience of night nurses definitely differed from that of their day colleagues. In terms of experience, it was found that night nurses claimed that, collectively, they had more experience (Brooks, 1999b:354).



**2.3 PHYSICAL (BODILY) EFFECTS WHICH RELATE TO THE NIGHT SHIFT NURSING EXPERIENCE**

**2.3.1 The cycle of sleep and wakefulness**

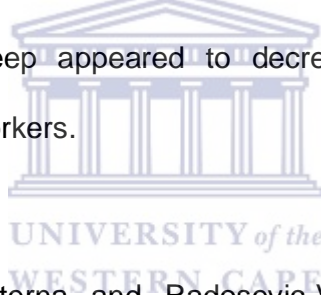
In humans, the circadian rhythm is controlled by 'a powerful inner timing mechanism, that regulates sleep and wakefulness and that governs a daily ebb and flow of bodily chemicals. The body's internal clock is reset each day by the rising sun and evening darkness, creating a natural cycle called a circadian rhythm' (Monk, in Slon, 1997:106). *Circa diem* is the Latin word for circadian, and means 'about a day' (Quraishi, 2004). This internal biological clock is situated in the suprachiasmatic nucleus found in the hypothalamus. The hypothalamus also plays a role in the hormonal and temperature rhythms, which are influenced by a combination of environmental factors such as temperature and light, as well as internal factors (Quraishi, 2004). Disturbances in the function of the hypothalamus can influence all the systems of the body, including the immune system. This may also contribute to various physical and mental illnesses, as well as sleeping disorders (Moldofsky, in Arthur, 2000; *Lexicon Dictionary*, 2004). Various problems such as sleep disturbances, illnesses and mood swings have been ascribed to the disruption in the 'cycle of sleep and wakefulness' (Westfall-Lake & McBride, 2000:25).

**2.3.2 Sleep disturbance**

Sleep disturbance or deprivation of sleep was one of the major complaints specified by nurses who worked night shifts (Kaldy, 1996:16). The accumulated effect that the lack of sleep over long periods could



have on the body further compromised the shift worker (Slon, 1997:107). Pilcher, Lambert and Huffcutt (2000:155), who studied the speed of rotating shifts in relation to length of sleep, showed that those on the night shift suffered the most damaging effects compared to those who worked the morning and evening shifts. Barton, Spelten and Totterdell (1995:109) had also shown that 'permanent' night nurses who worked five to six consecutive nights experienced longer 'sleep durations' than those who worked shorter nights (two to three nights). Dirkx (1993:29) found that nurses who worked a long shift, of five to eight nights in a row, slept less after their last working night. Day sleep duration and quality of sleep appeared to decrease over consecutive nights in permanent workers.



Vidacek, Kaliterna and Radosevic-Vidacek (1986:1583) found that married nightshift workers and overall nightshift workers slept less than morning and afternoon workers.

According to Costa et al. (1990:15), the experience of working shifts in different countries would be very different, as the local climatic conditions and specific customs would vary. Accordingly, sleeping during the day would be experienced differently.

Niedhammer et al. (1994:667) stated that there was an association

between shift work and the quality of sleep in night-shift nurses. The incidence of sleep disorders was higher amongst nurses who were working rotating or night shifts compared to those who worked day duty. However, over a period of five years this incidence was seen to have decreased. The explanation of these results was that the nurses were able to adapt to their circumstances. The presence of sleep disorders was also found to be an indicator for nurses who would consequently transfer from shift work to day work (Niedhammer et al., 1994:667).

**2.3.3 Use of psychotropic drugs**

The same authors investigated the use of psychotropic drugs by night nurses. They found that older, 'permanent' night nurses used more tranquilisers and hypnotics. The reasons given for the increase in usage were sleep and psychological disorders as well as impaired health and fatigue (Niedhammer et al., 1995:329).

**2.3.4 Tiredness and fatigue (and their association with shift length)**

Slon (1997:107) stated that constant fatigue was a pattern that appeared as a result of irregular sleep. Fatigue influences the functioning of the human body, and night workers may be less rational and may have difficulty in translating theory into practice. It was found that, as a result of the former, a stage of 'persistence in certain behaviours' would increase, clearly showing that the ability to apply self-regulation was lost. For instance, they repeatedly tried the same option even after it was clear for a long time that the action did not work. Fatigued subjects

guessed more often than well-rested colleagues and needed more time to think before making a decision' (Institute of Industrial Engineers, 2002:66).

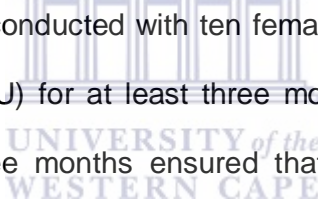
In this regard, the researcher gave consideration to the results of a study on strains and satisfactions of the three-shift workers (i.e., the three eight-hour shifts within the 24 hours of the day) by Olsson and Kandolin (in Costa et al., 1989). The study was conducted with 60 industrial workers and 30 nursing professionals in Finland, who were all experienced workers and also had long experience in the three-shift system. The paper mill industry had a fixed continuous three-shift system, in which they worked 36 hours per week with working tasks the same in each shift, while the nurses had an irregular three-shift system, having to work 39 hours per week. This study found that the three groups of shift workers did not differ statistically significantly in the strains and satisfactions of life.

### **2.3.5 Alertness and the effect of naps on mood and performance**

Nurses were found to be more alert early in the evening and at the beginning of a new series of night shifts (Dingley, 1996:1247). With more specific research conducted, Dingley showed that nurses felt that their level of alertness peaked on the fourth night compared to the first night of a span of night shifts. Totterdell et al. (1995:43) found that the alertness of the night nurses was the lowest on the second night and

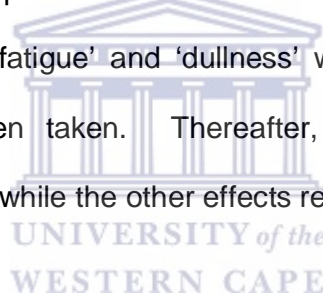
also lowest on the first day off duty after having worked the night shift. Wilkinson and Allison (1989: 281) found that the last night of having worked seven consecutive nights was the worst night of all.

A small study done on male aircraft-maintenance engineers showed that a single 20-minute nap might have improved alertness on the first night. However, single naps during subsequent nights were not shown to have any affect on fatigue, level of sleepiness when driving home or on the duration or quality of their sleep (Purnell, Feyer & Herbison, 2002:219).



A study was conducted with ten female nurses working in the Intensive Care Unit (ICU) for at least three months at a London Hospital. This period of three months ensured that the shift rotational system was known to them, as the expected normal schedule required of them was to work one week night shift in every five weeks. Five nurses (three skilled in 'intensive care nursing') took naps (30 minutes to two hours), while the other five (three skilled in 'intensive care nursing') did not take naps. The testing required each participant to complete a set of 'visual analogue mood' ratings as well as a 'logical reasoning' test 'at the start of the shift, 15 minutes after the end of the first nap (approximately in the middle of the shift) and just before the end of the shift.' The hospital management was particularly interested in the deliberate inclusion of the latter for the purposes of finding out the effects of the naps on decision

making. Mood rating and performance were analysed. Evidence showed that those who took a nap were slower immediately after the nap than those who did not. However, at the end of the shift, they were found to be quicker; these effects being obvious on all nights (Smith & Wilson, in Costa et al. 1989:147). In addition, Takahashi, Arito and Fukuda (1999, 223–5), who conducted a study with nurses, examined the effects of both the timing and the length of a two-hour nap during a 16-hour night shift. They suggested that, for napping during long shifts to be effective, the nap length should be carefully determined. This would avoid persistent inertia. They found that pre-nap levels of ‘sleepiness’, ‘fatigue’ and ‘dullness’ were enhanced instantly after the nap had been taken. Thereafter, however, ‘sleepiness’ lessened considerably, while the other effects returned to their ‘pre-nap state’.



An increase in neonatal mortality figures at night, derived from an observational study in Germany, was speculatively linked to the intensive mental and bodily tiredness, together with the lack of experience of the nurses and doctors in attendance at the births. ‘Babies born at night are twice as likely to die within the first 7 days of life as those born during the daytime’ (*British Medical Journal*, 2000:321:274–275).

Foulkard (in Arthur, 2000) referred to the so-called ‘owls’ and ‘larks’.

The 'larks' were the early risers, and the 'night owls' preferred late evenings. Ironically, though, he professed that it would be preferable for people who saw themselves as 'night owls' to avoid night shift because they would be tired by the end of the shift, while 'larks' would cope better with night shift as they would be the ones who would be more alert in the early morning hours (Foulkard, in Brennen, 2000:223).

**2.3.6 Gastrointestinal stress**

The literature indicates that the second biggest problem reported by night nurses was gastrointestinal stress, which included concerns about over- or under-eating, nausea, diarrhoea, constipation and food cravings (Alward, in Kaldy, 1996:16; Slon, 1997:107). Gastrointestinal ailments have lately been described as 'a growing epidemic' in people who work night shift (Konesey, 2000). (More specific reference on this aspect of the study is made under point 2.3.7 on 'colon cancer'.)

**2.3.7 Hormonal influence and the association with cancer**

Hormones commonly influenced by changes in the circadian cycle are melatonin, estrogen and the cortisol. The reason for this is that some of the activity of these hormones, for instance the production of melatonin, is only produced at night, due to the body's regular exposure to sunlight during the day (Schernhammer & Schulmeister, 2004:941–943). The peak production of melatonin in the body is usually reached at about 01h00 in the morning. Melatonin possesses established anti-cancer properties and is known for these, especially with regard to

cancers associated with the gastrointestinal system. Hence the mal-production of these hormones may increase the risk of these cancers. Female nurses who worked night shift have been found to have a 35 per cent increased risk of developing colon or rectal cancer (Schernhammer, Laden, Speizer, Willet, Hunter, Kawachi, Fuchs & Colditz, 2003:825).

Long-term night shift was also found to be associated with a 36 per cent increased risk in developing breast cancer (Schernhammer, Laden, Speizer, Willett, Hunter, Kawachi & Colditz, 2001:1563). The risk of getting breast cancer was found to be twice as high for women who averaged at least 5.7 hours of night work per week (Davis, in *Science News*, 2001:317). Davis, Mirick and Stevens (2001:1557) supported the findings that night shift was associated with an increased risk of developing breast cancer. They further supported the statement that the risk was increased with the increase in duration of years and hours that night shift has been/is worked. According to Davis (in *Science News*, 2001:317), 'clear evidence of the trend of increasing [cancer] risk with increasing years of the graveyard shift work' had been reported.

### **2.3.8 The menstrual cycle association**

The duration of night shift appeared to be associated with an increase in the severity of premenstrual and menstrual problems. It might further have been associated with a change in the perception of night nurses' psychological experience of their menstrual cycle. Changes in

menstrual cycles have also been described as being erratic with difficulty in conceiving (Slon, 1997:107; Totterdell, Spelten & Pokorski, 1995:996). Night shift in itself had also been indicated as a reason for subfecundity, which was gauged by 'time to pregnancy' (ttp). Females working permanent late and night shifts were found to have longer ttp compared to females on day duty (Zhu, Hjollund, Boggild & Olsen, 2003:12).

### **2.3.9 Night light and wellbeing**

It is known that light and temperature influence the circadian rhythm. Studies have been done to evaluate the effect of 'light exposure' on night nurses during their night-time shift. Leppämäki, Partonen, Piironen and Haukka (2003:22) showed that repetitive short exposures to bright light during night shifts improved 'subjective wellbeing' and significantly lessened the individual distress associated with night-shift work. Nocturnal alertness and performance have also shown improvement when nurses were exposed to bright lights during their shifts (Yoon, Jeong, Kwon, Kang & Song, 2002:351).

### **2.3.10 Other health problems**

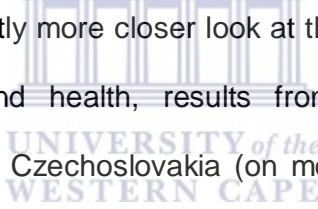
de Assis, Kupek, Nahas & Bellisle (2003:175) claimed that 'shift work is associated with nutritional and health problems'.

Working at night has been shown to damage health, intelligence, and relationships, as human bodies are not designed to cope in this way (Brennan, 2000:223). Night-shift workers tended to be more susceptible



to colds and flu because their immune system appeared to be weaker (Slon, 1997:107). Bourbonnais, Vinet, Vezina and Gingras (1992:673) and Colligan, Frockt and Tasto (1979:135) found that permanent night-shift nurses and nurses who rotate shifts took significantly more certified sick leave than day workers for serious illnesses.

Widespread literature had hypothesised that the weight of night work negatively influenced the health of the night-shift worker, but this was not proven however (Jozef, in Costa, 1989:89).



Taking a slightly more closer look at the literature discussions regarding night shift and health, results from the Institute of Experimental Psychology in Czechoslovakia (on morbidity and absenteeism rates of operators connected with the duration of their shift) revealed that the larger number of workers without any absence based on health reasons were found amongst the group of shift-workers working for eight hours (Jozef in Costa, 1989:89). Further, a notion existed, according to Jozef (in Costa, 1989:89) that 'shift workers have statistically lower morbidity' than those workers who do not work shifts. As indicated earlier, though, the researcher cautions that a deduction could be made that the group of non-shift workers referred to in Jozef (in Costa, 1989:89) also included those who had formally been shift workers but who were now working day shift only for health reasons, making an interesting

presumption that the workers with health problems aren't attracted to shift work.

The danger of the shift worker suffering from depression has been identified as a potential problem (Monk, in Slon, 1997:106), because working evenings or nights was found to be distressing in a social context and was intensified when the night worker had children (also indicated under 2.4.7 with reference to social/emotional support).

**2.3.11 Intake of alcohol/sweets and weight gain**

de Assis et al. (2003:175) further claimed that shifts may influence the intake of alcoholic beverages, sweets and starches, which may, in the researcher's opinion, be a contributory factor to the increase in weight gain. Significantly more nurses were found to smoke and take alcoholic drinks when they were allocated to work long shifts of five to eight nights (Dirkx, 1993:29). Kaldy (1996:16) found that working night shift might be harmful to the weight of the night-shift worker. In a study consisting of 46 men and 51 women, the researcher showed that workers on evening and night shifts had gained an average of eight pounds (3.628 kg) after starting the shifts. On average, day shift workers lost about one pound (0.45 kg). A definite cause for the weight gain was thought to be due to the intake of frequent snacks, along with the lack of daily exercise, change in eating habits, and sleep disturbances in those who worked the night shift (Geliebter, Gluck, Tanowitz, Aronoff & Zammit, 2000:27). The

time that elapsed between the last meal and retiring to bed for a night nurse was also thought to be a contributing factor to weight gain, as evening and night workers tended to go to sleep sooner after eating than day-shift workers (Kaldy, 1996:16). It has been said that night nurses may sometimes feel bored and then eat more (Slon, 1997:108), which then causes an increase in weight gain. One study has shown that night nurses gained as much as six kg more than day-time nurses over the same time period (Slon, 1997:106).

### **2.3.12 Injury and rest breaks**

The risk of self-injury was increased in people who worked night shifts, and was found to be the highest round about midnight. It also increased during the latter span of the shift (Smith, Folkard & Poole, 1994:1099; Folkard & Akerstedt, 2004:161). Regular rest breaks have been found to have decreased the risk of accidents during shift work (Tucker, Folkard & MacDonald, 2003:680). Slon (1997:111) stated that alertness decreased in the early hours of the morning which increased the risk of accidents. He further stated that night-shift workers might fall asleep behind the steering wheel when they drive home in the mornings.

## **2.4 THE SOCIAL EFFECTS RELATING TO THE NIGHT SHIFT NURSING EXPERIENCE**

### **2.4.1 The appeal of night shift nursing**

It had been shown that long-term night shift nursing continued to be

appealing for a 'considerably' small number of nurses, mostly female with family obligations. Brooks (1999b:348) in his ethnographic study on the 'Culture of night shift nursing,' found that 87 per cent of the night nurses indicated that they found their permanent night shifts convenient.

**2.4.2 Shift preference, choice and commitment**

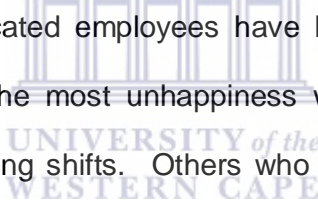
In a different study conducted by Brooks and Swailes (2002:117) that examined the relationship between nurses' shift patterns, influence over shift patterns and realisation of shift preference and commitment to nursing, results revealed that permanent night shift nurses reportedly had lower levels of commitment to nursing. Those nurses who had a choice in deciding which shift patterns they could work and who were granted permission to work the shift patterns of their choice, were found to be more pleasantly 'connected' with commitment to nursing (though the relationship was found to be weak). The study also found that, when nurses had positive perceptions of career development opportunities within their work sphere, a projection could be made that they would be the ones who would be more committed to rendering a nursing service in the future (Brooks & Swailes, 2002:117).

Studies done on the preferences to embark on night-shift work showed that there were advantages when workers were given the choice to work at night, rather than to be allocated to a night shift according to a roster. Those who were given the choice tolerated the night shift better. The

choice of whether to work the night shift should therefore be left to the individual (Barton, 1994:449; Humm, 1996:34).

**2.4.3 Shift tolerance and social compatibility**

The correlation of night-shift tolerance scores with other tolerance to shift-work scores established from questionnaire assessments done by Vidacek, Kaliterna, Radosevic-Vidacek and Prizmic (in Costa et al., 1989:218) indicated that 'better tolerance to night shift was associated with better sleep quality, longer duration of sleep after the night shift, and fewer health complaints, especially the psychosomatic-digestive ones.'

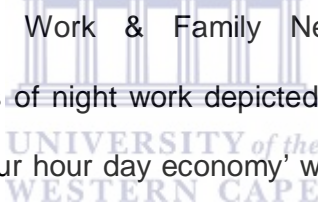


Younger educated employees have been shown to be the ones who experienced the most unhappiness with having to work shifts, which included rotating shifts. Others who also had difficulty with night shift included young single workers, as it was normally more the trend with younger employees to concern themselves with maintaining and establishing social contacts. Young married workers with small children were also shown to experience difficulty with night-shift work, as this group had a greater need to tend to their families (Westfall-Lake & McBride, 2000:25).

Night-shift workers often blamed the unsocial working hours of night shift as a reason for the incompatibility occurring in their social and family life. These unsocial working hours of the night worker had been found to

disturb the harmony of the spouses who were usually working day shifts (Escriba-Aguir, 1992:115). Shift workers and their partners agreed that night shift disrupted sleep patterns, health, social and family relationships and in particular the partner relationship (Newey & Hood, 2004:187).

Sirois (in Work and Family Newsbrief, 2000) indicated that too many employers 'throw people into that physiologically stressful and sociologically debilitating work life and let them sink or swim.'



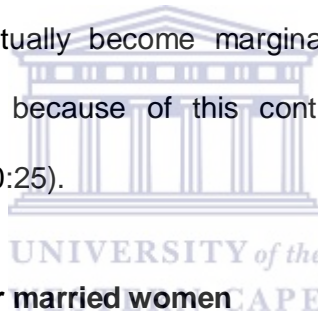
According to Work & Family Newsbrief (2000), some of the consequences of night work depicted as 'the other gloomy side of this new twenty-four hour day economy' were listed as associated 'split-shift parenting', tattered marriages and feelings of stress and isolation. Commonly, the perception amongst shift workers was that they suffered from social isolation – the Dutch verbalising this social separation as 'apartheid' (Costa et al., 1989:15).

Authors such as Robson and Wedderburn (1989:140) who reported on partners of married shift workers found that, generally, more male partners were unhappy with their partners working. However, and 'surprisingly', partners to the females appeared reportedly less resistant to them working shifts than those of the men (the male workers).

'Almost twice as many wives (17%) as husbands (9%) reported that their partner had tried to stop them from working shifts' (Robson & Wedderburn, in Costa et al., 1989:140).

**2.4.4 Participation in community activities**

The attempts made by shift workers to participate in community activities also scored poorly in the above because of erratic and irregular time schedules. Friends and community groups related to the night-shift worker have regularly been heard to complain about the difficulty they had in tracking the shift workers' constant revolving shift cycles. The workers eventually become marginalised from social invitations and appointments because of this continuous rotating (Westfall-Lake & McBride, 2000:25).



**2.4.5 Dual roles for married women**

Costa et al. (1990:15) cautioned that, when researching the topic of 'night-shift work', it has to be kept in mind that 'women working at night has a very different social impact depending on each culture's attitudes towards women, and their place in society.'

However, the uneven distribution of household chores of many of the Western societies illustrated by previous studies has shown that shift-working women do not get sufficient sleep. The domestic roles of cooking, house-cleaning, washing, ironing and, if there are children, child-care, are more so the responsibility of women. This has been

found to be particularly true for married women, as there appears to be a consideration that taking care of one's family is a full-time job. Hence 'shift work has, paradoxically, an extra attraction, because it can be arranged at times that cause least interference with domestic tasks' (Robson & Wedderburn, in Costa et al., 1989:137). In the introductory paragraph in *Shiftwork: Health, Sleep and Performance*, Kogi (in Costa et al., 1989:41) clearly indicated that, even if the long-established division between women and men were confronted, it remains true that most women working outside the home must still return home to bear the primary burden of household work.

**2.4.6**

**Children [The effects/needs]**

2.4.6.1 Educational effects:

A study by Heymann (2000:1) found that all age groups working the night shift had work disruptions because of family problems. The most alarming revelation was the effect that parental working conditions had on the children's educational outcome, with special emphasis on the effects that were associated with parents working evening and night hours. 'For every hour a parent worked between 6:00 pm and 9:00 p.m., says the report, his or her child was 16% more likely to score in the bottom quartile on math tests' (Heymann, 2000:1).

2.4.6.2 Behavioural effects:

Further devastating findings were that children of parents who worked night shifts were 172 per cent more inclined to have got into trouble and



to have been suspended from school. It was important to note that the study had not been conducted in isolation, as other relevant factors such as family income, parental education, marital status, the child's gender, and the total number of hours the parent worked were also taken into consideration (Heymann, 2000:1). He contended that it was evident that failure to meet the needs of the family results in chronic illness, school failure, and diminished success for both parents and their children (Heymann, 2000:1). Slon (1997:111) stated that, apart from being socially isolated and feeling depressed, the socially agonising position the night worker found herself in was aggravated when the person had children. Domestic activities such as mealtimes, parent-teacher association meetings and recreational activities such as soccer games were all organised in a manner that suited the shifts of day people. Monk, according to Slon (1997:111), related that children are seen by their 'night-shift working parents' most of the time as 'sleeping lumps' under the covers.

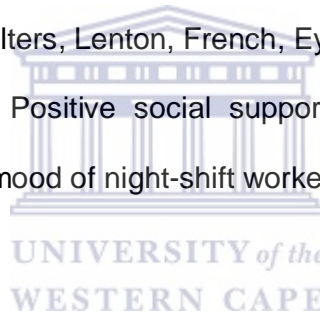
#### 2.4.6.3 Crèche/child-care facilities:

It is the researcher's perception that there seem to be extremely limited overnight and crèche facilities on the whole for children of night-shift workers, as the night nurses she worked with had frequently stated that their reason for absence from work was that they had no one to take care of their child/children. The consideration of and provision of such facilities and overnight care for children of night workers remains an

ongoing and unresolved problem (Konesey in Work and Family Newsbrief, 2000). According to Robson and Wedderburn (in Costa et al., 1989:137), the burden of household work is all the more difficult because of the inadequacy of child-care facilities and other social services. This then means a double burden, as it imposes a particular strain on women who perform night work.

**2.4.7 Teamwork, social/emotional support and 'night shift camaraderie'**

Lack of social support at work was associated with health problems and an increase in short-term and certified leave (Bourbonnais & Mondor, 2001:194; Walters, Lenton, French, Eyles, Mayr & Newbold, 1996:1627), 1996:1627). Positive social support from co-workers was found to enhance the mood of night-shift workers (Bohle & Tilley, 1993:125).



'The strain of shift work on personal and social relationships reduces the resources available for coping with the emotional and physical stressors encountered by nurses in their work and family roles' (Clissolds, Smith, Accutt & Di Milia, 2002:294). Monk (in Slon, 1997:106, 107 & 111) listed loneliness as one of the social tribulations that could plague a night-shift worker simply because of the isolation related to the nature of the job. He also listed depression as one of the potential health hazards that shift workers were challenged by, because he contended that working evening or night shifts was socially devastating. Shift workers also suffered from depression and loneliness (Ruggiero, 2003:434).

‘Having a confiding relationship with a friend is associated with fewer health problems...’ (Walters et al. 1996:1627), while Singer and Levens (in Costa et al., 1989:145) confirmed that those who were ‘more extroverted’ have also been shown to have fewer health problems characteristically associated with shift work. Walters et al., (1996:1627) also showed that nurses who have a poor relationship with their supervisors may experience health problems.

In a random cross-sectional survey of 218 female nurses in public hospitals in Hungary, conducted by Piko (1999:156), questions on various aspects of health were asked. ‘The results suggest that supportive relationships with peers may reduce the occurrence of high stress levels amongst nurses, leading the author to conclude that social support and the psychosocial work climate should be improved in health care institutions’ (Piko, 1999:156).

On further exploration regarding the social effects of night-shift nursing in the ethnography of Brooks (1999b:355), where he dealt with the ‘sub-culture’ of night nurses, he said that this ‘sub-culture’ was strengthened by the nurses’ commonly expressed belief that camaraderie was prevalent amongst, and largely unique to night nursing staff. Nineteen years prior to this study, Ghobadian (1986:133), with regard to shift work

in the brewery industry, speculated that the absenteeism appeared to be lower in shift workers compared to day workers. He attributed this to the presence of a teamwork spirit amongst the shift workers.

The references made by the night nurses with regard to their day-shift colleagues stated that they 'were very individual', according to Brooks (1999b:355). According to Zemke (2003:10), teamwork on the night shift unfolded comparatively naturally, as night workers did not have many teamwork concerns. With reference to staff camaraderie and team-working, they would frequently use the expressions 'Stick together' or 'Pull together'. In the study done by Brooks (1999b:355), the respondents argued that, because there were fewer nurses on duty at night, and very few allied health professionals, doctors and managers, night nurses had no other option than to be forced to work collaboratively.

Cowin (2002:40) a nurse herself, who had worked night shift for many years, wrote an article covering the experiences of nurses working night shifts, the challenges associated with working night shifts and the influence of working hours on quality of services provided. With regard to the social aspect of her experiences, she disclosed that she had become very close to the 'girls' she had worked with, and indicated that they knew the finer details of each other's lives. She added that,

because of the sense of camaraderie during night work, they had also come to know the rest of the night-shift workers across the hospital (Cowin, 2002:40).

An indication of teamwork was philosophically expressed by these night workers when they stated that 'life is too short to work with people who can't get along or pull their weight on the night shift' (Zemke, 2003:10).

#### **2.4.8 Teamwork and the corporate mission**

At an analogous situation at a motorcycle maintenance plant, 'Night-siders,' the name given to night workers, were found to have very rarely thought about their corporate mission or the bigger picture in which they functioned. They were not too concerned about the way in which others perceived their job efforts. However, they were found to be very mindful about the quality of the work they produced. The consideration of '...having done the job right' was seen as important, since this facilitated the work for the next worker (Zemke, 2003:10).

Nurses working the night shift were found to have less direction, as they claimed that there was no one to give 'corporate' guidance in certain situations (Brooks, 1999b:352).

#### **2.4.9 Development of 'destructive habits'**

Apart from the indicated tendency toward destructive habits, such as the increase in alcohol consumption and the use of drugs noted under the

physical aspect of this chapter (sections 2.3.10 and 2.3.11), they also have to be listed as social afflictions. Westfall-Lake and McBride (2000:25) contended that the incidence of alcohol and drug abuse was higher than that of day-time workers. Shift workers were also found to be more inclined to smoke and overeat. It appeared as if the shift worker would resort to these behaviours as coping measures which appeared to be used to help the worker deal with the added stress of shift work (Westfall-Lake & McBride, 2000:25).

**2.4.10 Feelings of being unappreciated, misunderstood and not valued**

A significant attribute grounded in research conducted with regard to night shift was the belief amongst night nurses that they were different and were 'unappreciated, misunderstood and not valued' as much as their day-duty colleagues were (Brooks, 1999b:356; Brookes, 1999a:41). Night-charge nurses were left to work with minimal means and less supervision. In addition, feelings of stress and isolation were increased amongst night nurses, as generalised beliefs prevailed that night work had lower value (Hubbard, 1997:28).

At a machinery company in Indianapolis, the human resource manager, who typically worked a standard daily time schedule from 08h00 to 17h00, sometimes returned to work at night because her employing company had begun to render support services such as human resource assistance and training at night, when it was more convenient for late-shift staff (Swift, 2000:24). Swift (2000:24) said '...an increasing number of companies...' seem to be embarking on offering these perks. It was

far easier for a night-shift worker to walk down the passage to see a human resource person, obtain training or even just make contact with the chief executive officer in their normal night working hours. Alternately, they would have had to work all night and then would have to wait after completion of their shift to have their concerns or needs attended to.

By and large, late-night employees are forced to adjust their schedules to fit into day-time training sessions and other personnel aspects relating to perks and conditions of service. Many work functions such as awards parties and lunches were simply missed because they coincided with late workers' bedtimes rather than meal breaks (Swift, 2000:24). The experience of Coburn (in Swift, 2000:24) of having walked into companies where the cafeteria was closed when the day shift had come to an end, and the later or night shift had commenced working, leaving these workers to fend for themselves, had sent a loud and clear message to the latter 'that they don't count as much' (Swift, 2000:24).

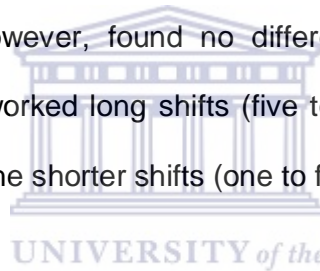
## **2.5 WORK RELATED EFFECTS PERTAINING TO THE NIGHT SHIFT NURSING EXPERIENCE**

### **2.5.1 Attitudes**

A study using another quantitative approach, aimed at identifying the attitudes of nurses toward terminally ill patients as well as the

relationship of these attitudes to different socio-demographic data, which included shift work, was conducted in Catalonia, Spain. Some of the findings concluded that a more positive attitude was observed in older caregivers and in women, and that the positive attitude decreased from the morning to the night shift (Román, Sorribes & Ezquerrol, 2001:338).

'Permanent' night-shift workers who worked five to six consecutive nights were more positive about night-shift work than those who were not permanently on the night shift (Barton et al., 1995:109). Dirx (1993:29), however, found no difference in job satisfaction between nurses who worked long shifts (five to eight nights) compared to those who worked the shorter shifts (one to four nights).



### **2.5.2 Professional and managerial duties**

In 1999, a study by Brooks (1999b:354) investigated professionalism of nurses in a hospital within the National Health Service (UK), and found that those nurses working on permanent night duty were seen by their colleagues to be less professional than nurses working on day duty. The findings of this UK hospital study were based on examining the attitudes displayed by night nurses compared to those displayed by day nurses. Interest displayed by night nurses in managerial duties was also found to be of less significance (Brooks, 1999a:41).

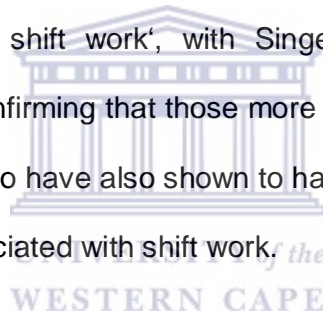
Another study by Brooks indicated that night nurses vehemently



proclaimed that they had been qualified for far longer than their day-shift counterparts, and that their 'management skills were better' (Brooks, 1999b:352). They said that they were skilled at making '...quick decisions, rationalise situations and act accordingly'. He added that day staff were not necessarily in agreement with these professed assertions made by the night nurses (Brooks, 1999b:354).

### **2.5.3 Tolerance for shift**

According to Smith, Norman and Folkard (2001:59), a combination of '...personality factors may be an important influence on an individual's tolerance for shift work', with Singer and Levens (in Costa et al., 1989:145) confirming that those more likely to take on evening shifts are extroverts, who have also shown to have fewer health problems than are typically associated with shift work.

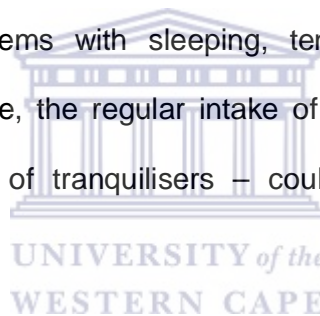


It was found that nurses who worked longer shifts (five to eight nights) obtained a higher score on the 'Active coping scale' than those who worked short shifts (one to four nights) (Dirkx, 1993:29).

Results from a comprehensive questionnaire conducted with 60 industrial (paper mill) workers and 30 nurses on a three-shift system indicated that the three groups 'did not differ statistically significantly'. However, the nurses had a higher total stress score. This information was revealed in the article 'Strains and satisfactions of the three-shift

workers' by Olsson and Kandolin (in Costa et al., 1989:207). Both groups had worked the same shifts and also had sufficiently long experience of three-shift work, with the same experience in shift work. The paper mill workers worked a fixed continuous three-shift system (plus/minus 36 hours per week), while the nurses had an irregular three-shift system (39 hours per week).

A study conducted by Piko (1999:156) amongst nurses in a public hospital in Hungary found that frequency of psychosomatic symptoms – namely problems with sleeping, tension headaches, palpitations or chronic fatigue, the regular intake of alcohol, heavy smoking, and the frequent use of tranquilisers – could be associated to work-related stress.



#### **2.5.4 Availability of supervisors**

According to events that occurred at a work hub at a motorcycle plant, it appeared as if managers had placed a lot of importance on being available 24 hours a day. Hence, a manager would periodically call the night supervisor or the quality person at night to establish how things were. The workers, however, expressed a lot of scepticism toward this initiative, as they felt that calling the shift was primarily showcasing, maintaining the stance that on the night shift there was no one to call, complain or lean on, when things went wrong (Zemke, 2003:10). Nurses working the night shift were also found to be at a disadvantage, as they

had fewer professionals, including doctors, to make up a team from which strength could be drawn to formulate duties and to assist in decision-making situations (Brooks, 1999b:352).

Hubbard (1997:28) also found that night-charge nurses had minimal resources at their disposal with which they were required to work. Personnel for supervision were also found to be minimal.

### **2.5.5 The ritualistic hand-over practice**

The study of the night-nursing 'subculture' done by Brooks (1999b:352), identified a string of differences in the routines and tasks of night nurses. Those tasks that were very peculiar to the night shift were also viewed as rituals and, according to the literature, there were many 'night-shift rituals.' One such ritual was the hand-over round from night to day shift. This task – viewed as a crucial task by night staff – was also seen as fundamental to the role of the night nurses. This ritualistic interaction did, however, offer an opportunity to enhance social unity in the wards and made provision for night staff to maintain a sense of belonging to the wider nursing culture – a custom from which nursing assistants and domestic staff were generally excluded (Brooks, 1999b:360). Despite its ritualistic character, the practical need for this task is that it facilitates continuity in nursing care.

**2.5.6 Shift times**

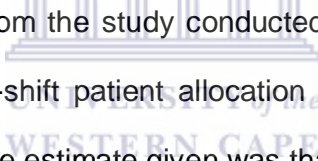
In many countries the traditional start and completion times of the shifts are 06h00, 14h00 and 22h00. Hospitals elsewhere, such as St. Louis University Hospital, offered a night shift that extended from 19h00 to 07h00 (Freeman, in *St Louis Post-Dispatch*, 2002). At the Presbyterian Hospital in Dallas, the traditional shifts offered were short: 07h00–15h00, 15h00–23h00 and 23h00–07h00. However, they offered longer 12-hour shifts as well, which allowed employees to come to work less frequently compared to five days per week while still fulfilling the required number of hours that had to be worked (D’Nan Bass, in *Dallas Morning News*, 2000). Labelling of shifts differed amongst authors. Some referred to day, afternoon, evening and night shifts, while others referred to the afternoon and evening shift as the late shift (Brooks, 1999b:352 & 364; de Assis et al., 2003:83; Swift, 2000:24).

According to a paper presented by Akerstedt on ‘Sleep and performance’ at the IX<sup>th</sup> International Symposium on Night and Shift Work in Verona, Italy, he had identified what the current issues were at the time with regard to this subject (Akerstedt, in Costa, et al., 1989:409). The fact that he had stated that shift times, along with speed of rotation and accident risks, are worthy of being further researched is suggestive of how important this aspect of the working of night shift is.

**2.5.7 Nursing ratio**

In California, proposed legislation in 2001 made provision for a new formula in calculating the amount of direct care patients were to receive

in Californian nursing homes. The legislation indicated that patients were to receive a minimum of 3.2/24 hours of direct staff care. However, evidence showed that this could not have been achieved previously because of the nursing crisis they had experienced. The supporters of the new proposal claimed that it appropriately directed accountability with regard to patient care. The 'bill' stipulated that, by 2004, certified nursing assistants would care for no more than five patients on day shifts, 10 on evening shifts and 15 on night shifts (Peele, 2001:). Progress on the passage of this bill has not been established at the time of writing this thesis report.



Disclosures from the study conducted by Brooks (1999b:352) revealed that the night-shift patient allocation for the rendering of nursing care was more. The estimate given was that this number was often in excess of ten, as opposed to the allocated six of their day equals (Brooks, 1999b:347).

#### **2.5.8 Rotational system vs. permanent night duty**

It was that numerous hospital wards at the hospital studied by Brooks (1999a:41) would at times embark on changing to an internal nursing staff rotation system between night and day, in an attempt to reduce the need for permanent night nurses. According to the comments made by the respondents in Brooks' ethnographic study, the 'night nursing culture' would certainly die if this were to happen.

**2.6 SUMMARY**

This chapter reviewed what writers on the subject of night-shift work and night-shift studies have found where nurses were involved. The chapter also touched on the cautions sounded about night-shift working. Reference was made in this chapter to some USA and UK experiences and the inevitable increasing need for night-shift workers. Age and experience were found to be features in the literature, while the focus of the literature review looked at what was said about the physical, social and work-related effects of having to work night shift.



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## Chapter 3

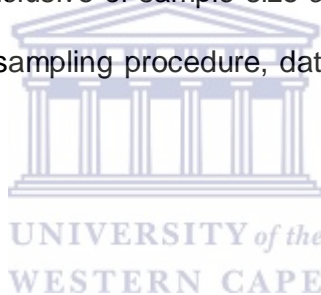
### RESEARCH DESIGN AND METHODOLOGY

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#### 3.1 INTRODUCTION

The purpose of this chapter is to describe and justify the research design used in this study, which was aimed at gaining insight into the experience of night-shift nursing as revealed by night nurses taking part in this study. The chapter focuses on the research methodology that was used. The methodology includes the research design, study population, (inclusive of sample size and sample population), criteria for participation, sampling procedure, data collection and the data analysis procedure.

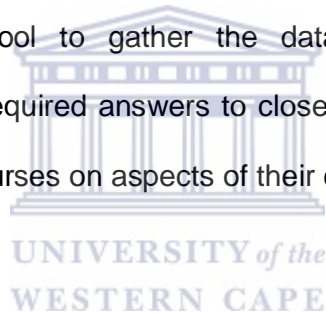


#### 3.2 RESEARCH DESIGN

This research study design is a descriptive, quantitative, survey approach. The research design was an overall plan followed to conduct the study i.e., to ‘...obtain answers to the questions being studied and for handling some of the difficulties encountered during the research process’ (Polit & Beck, 2004:49). It further includes control procedures, eliminating the risk of interference with the validity of the conclusions reached. The controls in this context ‘minimised bias and enhanced interpretability of results’ (Polit & Beck, 2004:29). The term research design in the context of this thesis refers to the study design, population

sampling, sample size, procedure that is to be followed, the data collection tool, testing for validity, reliability testing, data gathering, data analysis, and interpretation of the results.

Since the researcher endeavoured to investigate the experiences of night-shift nurses and how these related to the physical, social and working areas of the life of a night nurse, a research design, quantitative and descriptive in nature was found to be most appropriate for this study. In this regard, a Likert scale questionnaire was selected as an appropriate tool to gather the data. The tool designed by the researcher, required answers to closed- and open-ended questions put to the night nurses on aspects of their experiences.



Quantitative research is involved in collecting data that can be analysed numerically and aims to describe and explain events/characteristics and relationships between events/characteristics, in an objective and numerical manner' (Cluett & Bluff, 2000:214). This approach was therefore applied to analyse the quantitative answers in the questionnaire.

Qualitative research, on the other hand, is '...the investigation of phenomena, typically in an in-depth and holistic fashion, through the collection of rich narrative materials...' (Polit & Beck, 2004:729). The



open-ended answers (comments) derived from the additional column, were used to illustrate the quantitative data. Commentary responses which were the same or similar were considered and arranged in an organised manner, to illustrate the views expressed by the respondents.

The application of this 'quantitative, descriptive' approach using the questionnaire, was also seen as a 'survey approach'. In this regard surveys are said to be intended to give a general idea of a representative sample of a large population as well as give descriptions of phenomena '...practices, opinions, attitudes and other characteristics of people.' (Mouton, 2001:152; Knapp, 1998:67).



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The initial questionnaire (appendix 6) was used in a pilot study where a sample of nine night nurses tested the questions, and after this the 'retest' method was applied. Only eight of the original nine participants availed themselves for the retest. Feedback was thus obtained from the pilot study participants and from experts (as defined in 1.3) on the questionnaire. The feedback suggestion that the use of only quantitative answers might limit the descriptiveness of the night nurses' experiences, and consequently limit the results was considered. Having heeded this, the researcher then also made provision for a comments column where participants could state their views.

### **3.3 STUDY POPULATION, SAMPLE SIZE AND SAMPLE POPULATION**

The study population consisted of all the available nurses on night shift, at the hospital, which totalled 320. Three hundred and nineteen (319) night nurses consented to participate and accepted the questionnaire.

The fact that use was made of the availability of these nurses, who were on night duty at the time, could be seen as 'convenient.' Hence it could be stated that use was made of a 'convenience sample' as described by Brink and Wood (1998:272). Burns and Grove (1998: 237 & 247) suggested that an 80 per cent participatory rate was adequate for rendering a study valid, in order to draw conclusions. This study however delivered a participatory rate of 89 per cent (n286/320) rendering the survey valid as well as appropriate and representative as recognised by Burns and Grove (1998: 237 & 247).

It was required of all the participants to agree verbally that they would voluntarily participate in the study. A representative sample of 286 nurses responded by completing the research questionnaires.

### **3.4 CRITERIA FOR PARTICIPATION**

Only the resident nurses employed by the designated tertiary hospital who were on night shift in July 2004, were asked to participate in the

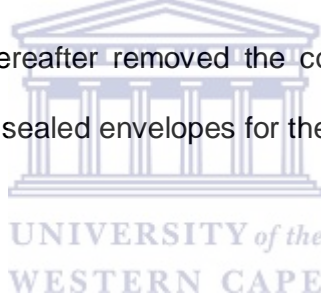
study. Nurses who were in the employ of the various nursing agencies and nurses who were working overtime for the hospital and who were on duty on the nights that the questionnaire was conducted, were not viewed as regular night-shift nurses and hence were excluded from participation in this study. The length of time any participant had been working night duty was not an exclusion criterion.

### **3.5 DATA COLLECTION PROCEDURE**

The researcher both publicised and informed the participants about the pilot study and the prospective study at several meetings before the onset of recruitment. These forums included two senior nursing management meetings also known as Deputy Director Nursing Group Meeting (DDN), one meeting for head nurses (unit supervisors) and at two 'night sisters' meetings (two opposite shifts). The researcher also conducted smaller floor meetings with the night nurses to promote and ensure that information about the study had been received by the prospective participants in all of the six major clinical areas of the hospital.

The questionnaires were distributed to all the nurses by the researcher on the nights of the 29th and 30th July 2004. The researcher recruited ten registered nurses to assist her with the distribution to ensure that all the nurses who were working had the opportunity to participate. The

researcher distributed six more questionnaires after these two dates to qualifying night nurses who were not able to participate on the two stipulated nights because they had been off sick on the nights that the field work occurred. A total number of 319 nurses accepted questionnaires. On each of the nights that the questionnaires were administered, the completed questionnaires were received back directly by the researcher by the following mornings prior to the end of each of the shifts. The sealed questionnaires were placed by the participants directly into a container designed for this purpose. The 'secondary' six completed questionnaires were received by the 4th August 2004. The researcher thereafter removed the completed questionnaires from the container and sealed envelopes for the purposes of capturing the data.



### **3.6 DATA COLLECTION INSTRUMENT**

The questionnaire as indicated under '3.2 Research design' was selected as the data collection instrument in this study. The advantage of the questionnaire as a tool was that it facilitated a higher participatory rate. A further reason for selecting the questionnaire was that it made provision for the participants to feel a greater sense of anonymity as well as that it allowed for limited subjectivity on the part of the participant (Burns & Grove (1993:368)).

The researcher developed the questionnaire (appendix 6 and 8), based

on the information gained from the literature search. The questionnaire consisted of 46 structured closed ended questions in total. Thirty-one of the questions required the nurse to choose one desired answer according to a four-point Likert nominal scale ranging from 'strongly agree' to 'strongly disagree'. Fifteen questions were set according to a semantic differential scale (Chater & Williamson, 1996:219). The 46 questions were mixed.

An extra column/box was created and placed next to each question for comments, should the participant have desired to make one. This extended the responses, allowing participants to indicate their own subjective comments. The provision of the column/box was added after feedback from the pilot study participants and the assessors of the questionnaire had indicated that the night nurses might have a need to express themselves more; thus some depth and 'insider perspective' was allowed for, as surveys sometimes only lead to surface level information (Mouton, 2003:153). Jozef (in Costa et al. [Eds]. 1989:89) who discussed an investigation previously conducted into the influence of shift work, similarly used a subjective evaluation tool where the health worker was required to answer questions relating to her state of health.

The questionnaire was divided into six main sections. These sections sought to obtain information and insight on specified aspects of the

night-shift experience of the night nurse. The subheadings were:

- Demographical details (7 questions),
- General (2 questions),
- Physical effects related to night-shift nursing (8 questions),
- Social effects related to night-shift nursing (7 questions),
- Work related effects pertaining to night-shift nursing (18 questions), and
- Impact related to partners (4 questions).



### **3.7 QUESTIONNAIRE RELIABILITY**

The researcher subjected the questionnaire to the 'test-retest reliability method', to assess the reliability of the questionnaire (Polit, Beck & Hungler, 2001:305). This pre-run (test) of the questionnaire was conducted on Monday 21<sup>st</sup> June 2004 with a group of nine night nurses who were not part of the study sample (they had been on leave in July). The retest was conducted on Saturday 26<sup>th</sup> June 2004, by giving the questionnaire again to the same group of night nurses who had completed the questionnaires on 21<sup>st</sup> June. Eight of the nine completed the re-test as only eight of the nine nurses were on duty on the second night. 'Preparatory work of this nature can only enhance the quality of the questionnaire in terms of the number of returned questionnaires and the accuracy of the responses' (Charter & Williamson, 1996). The two

matched sets consisting of eight questionnaires each were then statistically compared for reliability using a correlation test (scatter diagram comparison). The correlation yielded a coefficient of 0.76. Hence a strong positive relationship was found between the results of the test and the retest questionnaires and on this premise the test retest questionnaire was found to be reliable (Brink & Wood, 1998:265; and Mendenhall & Sincich, 1993:116).

### **3.8 VALIDITY OF QUESTIONNAIRE**

Brink and Wood (1998:272) suggest that it is helpful to have a panel of judges who are 'experts' in the content area to review the intended research topic. The question on validity that had to be asked was how representative the questions on a questionnaire were with regard to what was to be measured. Content and face validity were measured by handing copies of the draft questionnaire to six postgraduate students requesting them to assess its contents and to feed this back to the researcher. Only one responded by completing the questionnaire. Further content and face validity were then applied by presenting the questionnaire to a group of nine other 'experts' for critique and assessment with regard to the degree to which what is to be tested is represented, as well as the questionnaire's overall appropriateness for use (Brink & Wood, 1998:272). The experts were eight colleagues who were experienced in the night-shift arena as well. Six people responded

in writing, one verbally and another responded verbally as well as in writing. The questionnaire was also given to the researcher's supervisor, co-supervisor and a statistical consultant for comments. The Committee for Higher Degrees also commented on the questionnaire. The researcher subsequently adjusted the original questionnaire in preparation for the actual field work of this study, taking cognisance of the feedback from these sources and the pilot study.

### **3.9 DATA ANALYSIS PROCEDURE**

The returned questionnaires were removed from the sealed envelopes by the researcher only. Each questionnaire was allocated a subject number where after the researcher then captured this data by making use of the Microsoft Excel 2000 programme. The data entered into the Excel programme was re-checked twice with the assistance of another person to verify its correctness. Analyses occurred by using:

#### **3.9.1 Descriptive statistics**

All the quantitative responses were added and translated into percentages. These straightforward results are depicted in chapter four descriptively, with use having been made of graphs and/or tables for certain selected results.

#### **3.9.2 Analysis of comments column**

The questionnaire included a comments column which gave



respondents an opportunity to qualify their chosen answer from the Likert or semantic differential scale. These comments (more detailed information) obtained from this column of the questionnaire were examined manually by the researcher to determine what the commentary was, e.g. how frequent or infrequent reasons were given and/or comparing adjectives that appeared in the commentary. These comments were used to illustrate the quantitative data.

### **3.10 ETHICAL CONSIDERATIONS**

#### **3.10.1 Authorisation to conduct the study**

Permission to conduct the study was obtained from:

The Ethical Committee of the Faculty of Community and Health Sciences, UWC

- The management and nursing division of the selected tertiary hospital,
- The Research Ethics Committee of the University of Cape Town and the tertiary hospital.

Permission to conduct the study was also sought from the participants. In this regard, verbal consent from the night nurse along with the voluntary filling in of the questionnaire were regarded as participant consent.

**3.10.2 Right of full disclosure and the right to withdraw**

The aim, purpose, method and usefulness of the study were explained verbally to the night nurses directly. Further explanation of the study was done via internal nursing meetings to the broader as well as to the study population. Printed information on the front and back pages of the questionnaire informed the prospective respondents of the following:

- The aim of the study
- The identification of the researcher
- Proof of consent for the study obtained from the designated hospital's management.
- The usefulness of research on this topic.

The researcher also asked the nurses to participate voluntarily and explained to them what the nature of their voluntary involvement in the study would entail. They were informed of their right not to participate if they so wished and that a refusal to take part in the study would not in any way prejudice them. Information on when and where they may obtain results was also given. Their right to withdraw at any time was also emphasised.

**3.10.3 Right of confidentiality**

To ensure anonymity and confidentiality, the names of participating nurses were neither used in the questionnaire or the report/thesis, nor did the researcher know their identities. Sealable envelopes were used for completed questionnaires provided to the participants and once

placed in the box, they were handled only by the researcher. The nurses were informed of this as well.

### **3.11 SUMMARY**

In summary, the research design and methodology employed a quantitative, descriptive approach, aimed at objectively investigating some of the aspects of night-shift nursing and its effects on nurses who work the night-shift. Using an appropriate and representative sample size of 286 night-shift nurses (out of a population of 320 nurses), a survey covering a broad range of issues dealing with the effects of night duty was completed by the sample group. In order to test the reliability of the questionnaire /survey, a 'test-retest' method was employed. This test essentially compared the results of two identical surveys submitted by the same sample group, submitted at different times. The quantitative results revealed the tests to be correlated to a high degree, implying responses to the survey to be of significant consistency. After data collection was completed, analysis was embarked on using descriptive methods. The quantitative survey results were processed into an electronic format. The comments were individually used to clarify the quantitative findings, identifying prominent views.

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## Chapter 4

### RESEARCH FINDINGS

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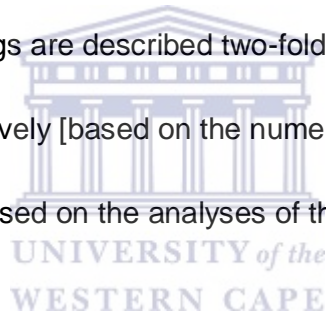
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#### 4.1 INTRODUCTION

The purpose of this chapter is to present the information that was obtained from the data collected for this research study. This chapter includes the findings in respect of the demographic profile, rationale for working the night shift, and the physical, social and work-related effects, as reported by the respondents in this study.

The findings are described two-fold:

- Quantitatively [based on the numerical data,] and;
- Views [based on the analyses of the comments].



##### 4.1.1 Demographic data

A total of 320 nurses were working night shift at the time the study was conducted. Of the 320 nurses, 319 accepted the questionnaires. The total number of questionnaires returned i.e., the gross response rate was 286 (89.6%).

A total number of 243 (84.96%) respondents indicated their gender. Of this total 220 (90.53%) were females and 23 (9.46%) were males. Forty three (15.03%) of the overall number of respondents did not indicate their gender.

Of those who indicated their rank, there were slightly more enrolled nursing assistants (108/265, 41%) than registered nurses (91/265, 34%). The enrolled nurses, the third participating category in this study comprised 25 per cent (66/265). Eight per cent (21/265) of the respondents did not indicate their rank. The smallest group of night nurses was the male enrolled nurses and male registered nurses [both groups were 7/265 (2.64%)], while the biggest group was the female enrolled nursing assistants (85/265, 32%).

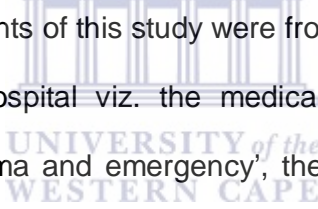
The question with regard to age was answered by 265/286 (92.6%) respondents. The majority of the respondents (210/265, 79.24%) were found to be between the ages of 30 to 49 years. None of the respondents was under the age of 20 years while 24/265, just fewer than ten per cent, was between the ages of 50 and 59 years.

The study found that 129/264 (48.86%), just less than half, were married while 108/264 (41%) were single. A group of 20 (8%) were divorced while a smaller number of seven (3%) were widowed.

Two hundred and seventeen participants responded to the question about children. The majority (189/217, 87%) of the respondents stated that they had children. A total of 171/189 (90.4%) indicated how many children they have of which the majority, 74/189 (39%), had two children.

The number of children the night nurses had (as indicated by them) ranged from nil to four children. One night nurse indicated that she had five children (table 4.1).

The length of the night-shift period that had been worked by those who indicated this aspect, revealed a distribution curve with the largest portion (70%) of the participants having been on night shift for a period of six months or less while the second largest proportion, (19%) were on night shift for more than 24 months.



The respondents of this study were from all six major clinical areas in the designated hospital viz. the medical department, the department of surgery, 'trauma and emergency', the operating theatres, the intensive care units and the 'obstetrics and gynaecology' departments. The response rates of the night nurses from the various areas were found to be in proportion to the nurse allocation within the hospital, hence the largest group (79/263, 30%) of night nurse respondents worked in the surgical area while the smallest portion (13/263, 5%) came from the operating theatres (table 4.1).

Table 4.1: Demographic data

Demographic categories	Total	Findings				
Age group (years)	265	< 20	20-29	30-39	40-49	>50
		0	31 (12%)	109 (41%)	101 (38%)	24 (9%)
Gender	243	Female	Male			
		220 (91%)	23 (9%)			
Marital status	264	Married	Single	Divorced	Widowed	
		129 (49%)	108 (41%)	20 (8%)	7 (3%)	
Children		Nil	1 child	2 children	>2 child	
		28/217 (13%)	56/189 (30%)	74/189 (39%)	41/189 (22%)	
Nursing Category	265	Registered	Enrolled	Enrolled		
		91 (34%)	66 (25%)	Assistant 108 (41%)		
Nursing Area	250	Trauma & Emergency	Medical	Surgical	Maternity Centre	ICU & OT
		35 (13%)	48 (18%)	79 (30%)	44 (17%)	57 (22%)
Length of period on night shift (months)	263	1 to 6 months	7 to 12 months	13 to 18 months	19 to 24 months	> 24 months
		174 (70%)	19 (8%)	5 (2%)	4 (1.6%)	48 (19%)

**4.1.2 Rationale for night duty**

Of the 275 night nurses who responded to the question on the reason they were working on the night shift, 181/275 (66%) indicated that they had been 'allocated' to do night shift. Twenty seven per cent (74/275) worked night shift because it was convenient for them to do so and three per cent (9/275) were doing this for financial reasons, while 1.5 per cent (4/275) said that it was for study purposes. Seven nurses (2.5%) said that they were working the night shift for more than one of the listed options.

On the question on the rationale for their doing night shift, the preferences which emerged of the 23/265 (8.6%) who commented were

1 Mandatory night shift allocation:

This group viewed their allocation as part of the two to three month compulsory yearly allocation which they had either been asked or forced to do. '*I hate night shift*' was the strongly expressed view of one with which some of the others concurred. Nevertheless this group agreed that although they disliked being allocated to it there ought to be some nurses on night duty as '*someone has to do it*' (i.e., look after the patients) (11/23, 48%).

2 Convenience:

Personal and social commitments such as having a parent, baby, children and children in the puberty phase at home to supervise required



this percentage of the respondents to resort to working night shift. In some cases it was also for the convenience of travelling purposes. Others said that they needed to be securing their home during the day with their presence (5/23, 22%).

3 A financial position perspective:

Two (8.6%) respondents from the above group indicated that working night shift was financially beneficial while the rest (5/23, 21.7%) said that they found the night-shift financial incentive '*disgracefully too little*,' '*laughable*' and '*non-existent*' (7/23, 30.4%).

#### 4.1.3

##### **Shift preference**

More than half (142/270, 52.6%) of the night nurses indicated that they preferred to work the day shift. Those who preferred night shift amounted to 120/270 (44.4%) while 8/270 (3%) had no strong preference for working either day or night shift. Fifty per cent (50%) of the enrolled nursing assistants preferred night duty while registered nurses and enrolled nurses mostly preferred day duty.

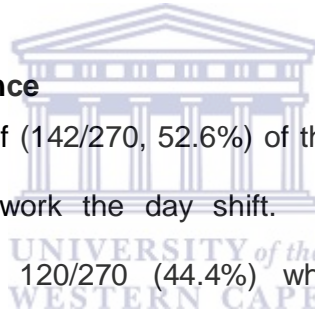


Figure 4.1: Shift preference per nursing category

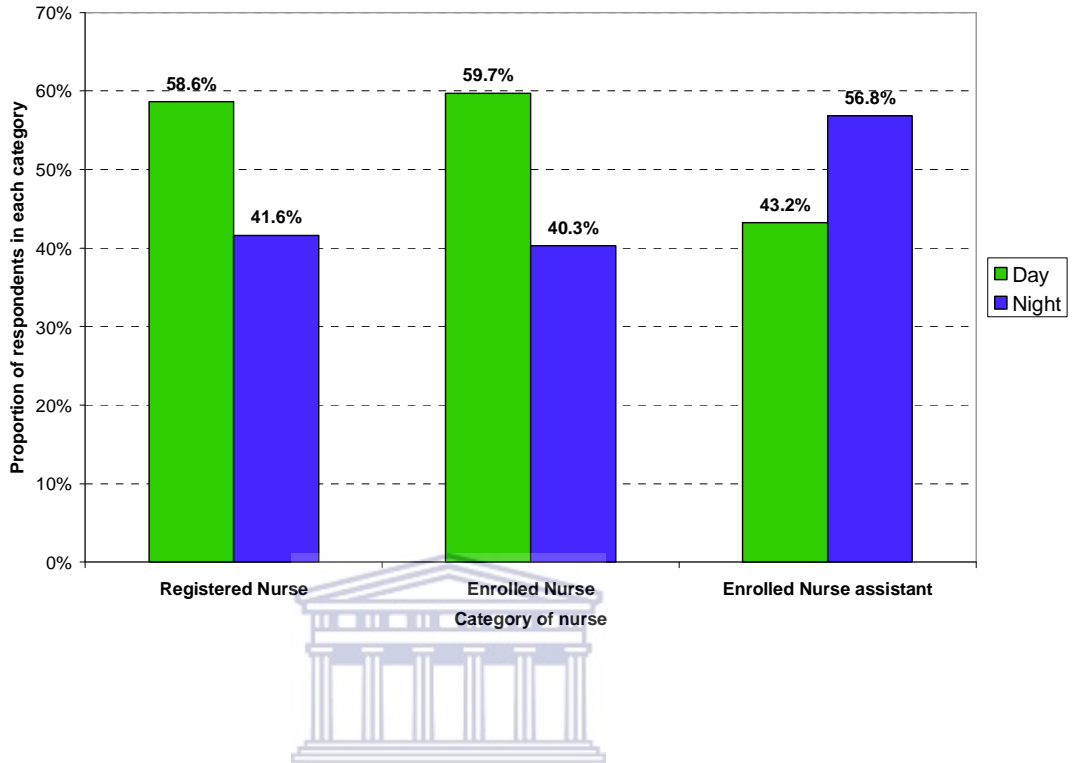
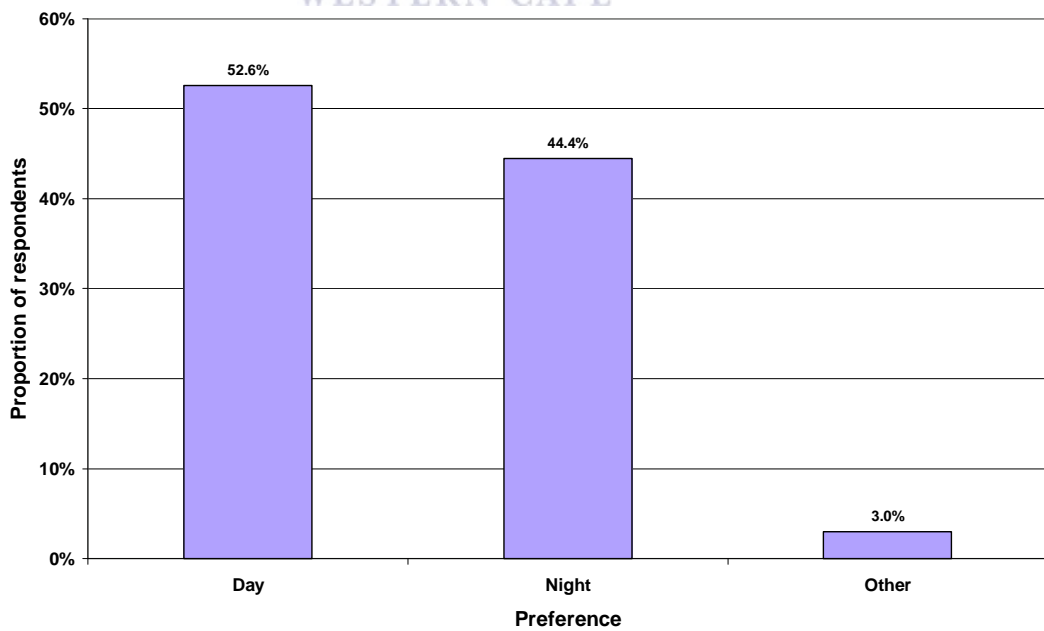


Figure 4.2: Shift preference of all respondents



From the comments on preference for night shift, three groups emerged. Those who welcomed either shift, those who preferred working night shift and those who believed that the night was meant for sleep.

1. Welcomed either shift (11/20, 55%)

The sentiments expressed by the above group were indicative of the change being enjoyed from day to night shift, of acceptance of the informal nursing organisational system of shift allocation whereby a nurse would at times be required to work 3 months day duty followed by 3 months of having to work night duty, with feelings also being expressed that a nurse could not be doing night shift continuously.

2. Preferred working night shift (7/20, 35%):

Results showed that some nurses believed there were advantages to working night duty because it was less stressful, that they were able 'to take over responsibility' more than in the day because they were exposed to more situations that required '*solutions*'. However a small cautionary note was sounded because, as they pointed out, these advantages were dependent on who the nurses were with whom they would be working on the night shift '*otherwise it can be dreadful.*' Almost half of this group (3/7, 43%) who preferred working night shift listed personal reasons for their choice.

3. Believed that the night was meant for sleep (2/20, 10%):

This group echoed the sentiments of Slon (1997: 106) who believes in

the natural phenomenon that sunlight and daytime is associated with doing business i.e., daily chores, working, sport, training, while the physical bodies wind down later in the day in preparation for night sleep. They were adamant that the night was not meant for working.

The physical, social (inclusive of partner relationships) and work-related aspects of the nurses' experiences of night shift are given below under their individual subheadings.

## **4.2 FINDINGS REGARDING PHYSICAL ASPECTS OF THE NIGHT DUTY SHIFT**

The physical findings that follow describe bodily adaptations which include aspects regarding circadian rhythm adaptation, health, sleep, absenteeism due to illness, tiredness and fatigue, weight and the period of the night when the worst physical effects are felt.

### **4.2.1 Circadian rhythm adaptation**

Slightly less than half of the respondents (118/260, 45%) either strongly agreed (46/260, 18%) or agreed 72/260 (28%) with the statement that their body's circadian rhythm couldn't adapt to the night shift. The comments 15/260 (5.7%) on the adaptation of the body's circadian rhythm come from three groups:

#### **4.2.1.1**

Those who indicated that their circadian rhythm had adapted after a

period that ranged between three months and one year (8/15, 53.3%);

#### 4.2.1.2

Those who, either because their response is so predominantly that they '*hate night duty*' they haven't allowed themselves to evaluate objectively whether their bodies had adapted, and those who have experienced problems in adapting (5/15, 33.3%).

#### 4.2.1.3

Those who indicated that they had no adaptation problems, stating that their circadian rhythm was '*normal*' and that they '*had been working night duty for too long*' to suffer adaptation problems (2/15, 13.3%).

### 4.2.2 **Sleep problems**

Nearly two thirds of the nurses stated that they experienced sleep disturbances. A total of 161/ 269 (60%), strongly agreed or agreed that that they had more sleep problems related to working night shift. Two main categories of problems emerged from the 7/161 (4.3%) comments of those who experienced sleep disturbance. These categories are outlined below.

#### 4.2.2.1 External factors (4/7, 57%).

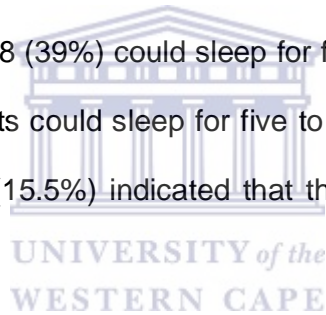
Listed reasons in this regard indicated that the respondent was either '*living in a noisy area with a school just down the road*' whilst in other cases sleep was interfered with because, '*you must wake up in time for children to be fetched or come home*' and generally having lots of

disturbances during the day, with weekends being the worst.

4.2.2.2 Problems with sleep as a natural process (3/7, 42.8%):

Respondents indicated that they could either only sleep for two hours during the day or did not sleep enough or were not able to adapt to night work.

With regard to how long the respondent was able to sleep during the day, a 97% (278/286) response rate was elicited. Most of the nurses were able to sleep for more than four hours per day during their night-shift period. Twenty-four per cent (24%, 67/278) slept for less than four hours, 108/278 (39%) could sleep for four to five hours, 59/278 (21%) of the participants could sleep for five to six hours. Forty-three out of 278 respondents (15.5%) indicated that they could sleep for more than six hours.



**Table 4.2: Number of hours slept**

	Total	Findings			
Number of hours slept (able to)	n278/286	4 hrs	4 - 5 hrs	5 - 6 hrs	>6 hrs
Number of nurses		67/278	108/278	59/278	43/278
	24%	39%	21%	15.50%	

Even though only 1.4% (4/278) of the night nurses made further comments on the number of hours slept, the researcher found that these

respondents all slept five hours and less, and that this was dependent on whether they had children in their care or not. It was found that those nurses who slept the least number of hours had the biggest need for crèche facilities.

#### **4.2.3 Health problems**

This study found that 119/260 (45.7%) had never been off sick, while a total of 141/260 (54%) of all the night-shift nurses, had been off sick at some time within the six month period prior to the study. A significant factor that emerged from this question was that the 3/260 (15%) who had been off sick for more than eight days, listed their reasons as requiring extended periods of recovery, such as '*due to surgery,*' '*broken arm*' etc.

On the question of whether they had had more health problems whilst on night duty compared to day shift, 265 responses were received of which only one quarter (66/265, 26%) strongly agreed or agreed that they had experienced more health problems. Four respondents, out of 66 (6.06%) elaborated with the following comments. They stated that they had suffered '*headaches,*' '*body aches,*' had '*problems because of the air vents,*' were '*unable to breathe,*' were '*exhausted,*' found that their '*sinuses had worsened*' and that they were '*sometimes unable to sleep*'.

#### **4.2.4 Sick leave**

This study found that 119/260 (45.7%) had never been off sick, while a total of 141/260 (54%) of all the night shift nurses, had been off sick at

some time within the six month period prior to the study. A factor elicited by this question was that the 3/260 (15%) who had been off sick for more than eight days, listed their reasons as requiring extended periods of recovery, e.g. 'due to surgery,' 'broken arm' etc.

#### 4.2.5 Tiredness and fatigue

In this study, more than three quarters of the night nurses (202/266, 76%) were in agreement that they needed more time to make a decision when they felt tired and fatigued when working at night. (table 4.3).

**Table 4.3: Body adaptation responses**

Questions	Total responses	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
I have more health problems when working night shift	265	25 (10%)	41 (16%)	161 (61%)	38 (14%)
I have more problems with sleeping when working night compared to when I worked day shift	269	80 (30%)	81 (30%)	91 (34%)	17 (6%)
My body's circadian rhythm cannot adapt	260	46 (18%)	72 (28%)	114 (44%)	28 (11%)
When I am tired and fatigued, I need more time to think	266	65 (24%)	137 (52%)	51 (19%)	13 (5%)

#### 4.2.6 Weight gain/loss

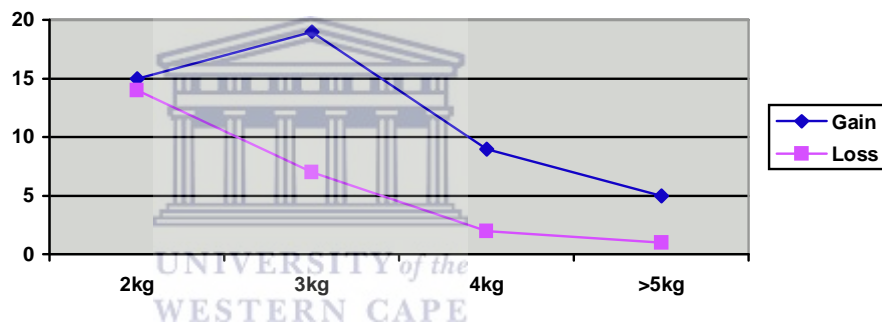
A quarter of the nurses (69/263, 26.23%) stated that they had not lost or gained any weight while on night duty. Two in each group stated that they had either lost or gained weight respectively, however they did not indicate the amount of weight. Nearly half (130/263, 49%) gained some



weight while on night shift, compared to 24% (63/263) who had indicated that they had lost some weight (table 4.4 and figure 4.3).

In response to the question on weight gained/lost, 2/263 (0.7%) respondents who stated that they had gained two to three kilograms in weight, commented that they had eaten more ‘*out of frustration*’ or had ‘*eaten to stay awake.*’

Figure 4.3: Weight gain/loss



(Y axis = percentage of nurses)

(X axis = kg weight gained / loss)

**Table 4.4: Weight gain/loss (in kilograms)**

No (%) of nurses	Kg/s gained(G) or lost(L)
14/263 (5.32%)	G 5
23/263 (8.7%)	G 4
51/263 (9.39%)	G 3
40/263 (15.2%)	G 2
69/263 (26.23%)	G 0, L 0
36/263 (13.6%)	L 2
19/263 (7.2 %)	L 3
5/263 (1.9%)	L 4
2/263 (0.7%)	L 5
2/263 (0.7%)	G
2/263 (0.7%)	L

**4.2.7****Worst time period of the night experienced by respondents**

Physically the worst period of the night indicated by the majority (139/265, 52.4%) of the respondents, was the period between 03h00 to 04h00. [One nurse stated that she felt bad only when she had had a lack of sleep during the day i.e., less than four hours]. One hundred and twenty-six participants (47.5%) indicated various other periods to be their worst. Six (2.2%) identified the period before 01h00 as their worst, 14/265 (5.2%) indicated that the period between 01h00 and 02h00 was the worst for them, 53/265 (20%) said that their worst period was between 02h00 and 03h00 while the other 20% (53/265) indicated the period between 04h00 and 07h00 to be physically their worst. It was found that the 48/250 (19.2%) who had been working the night shift for more than two years, made up part of the 139/265 (52.45%) who had indicated that their worst time during the night was between 3h00 and

4h00. It was further found that the registered nurses' category who worked night shift for more than 24 months were the worst affected by the 3h00 to 4h00 time period.

Two nurses indicated that they felt 'physically worst' for the entire shift, while three nurses reported that they either 'never' had a 'worst time', that they were 'productive for 12 hours,' or that they were 'always alert.'

Figure 4.4: Worst time period during the night for all categories of nurses

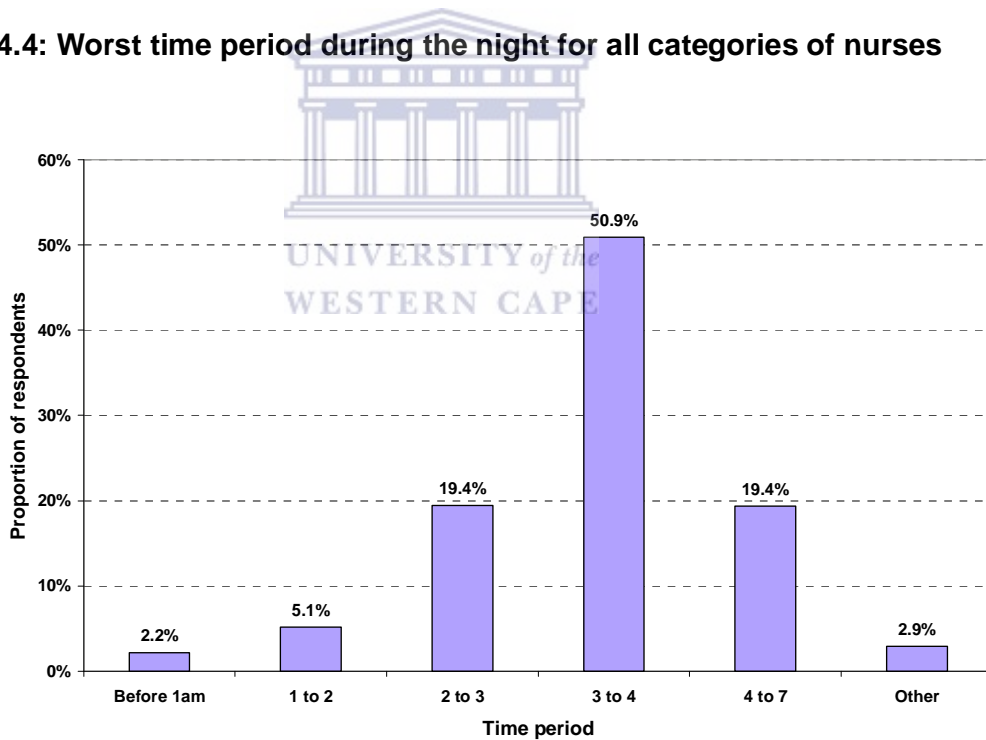


Figure 4.5: Percentage of personnel represented in each time period above

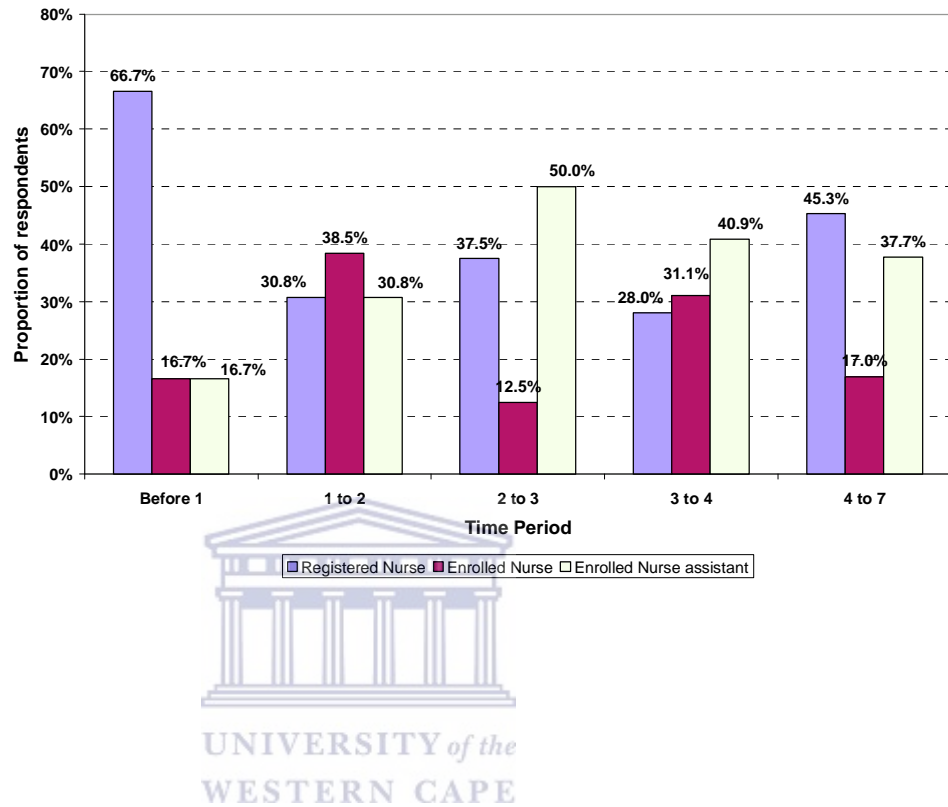
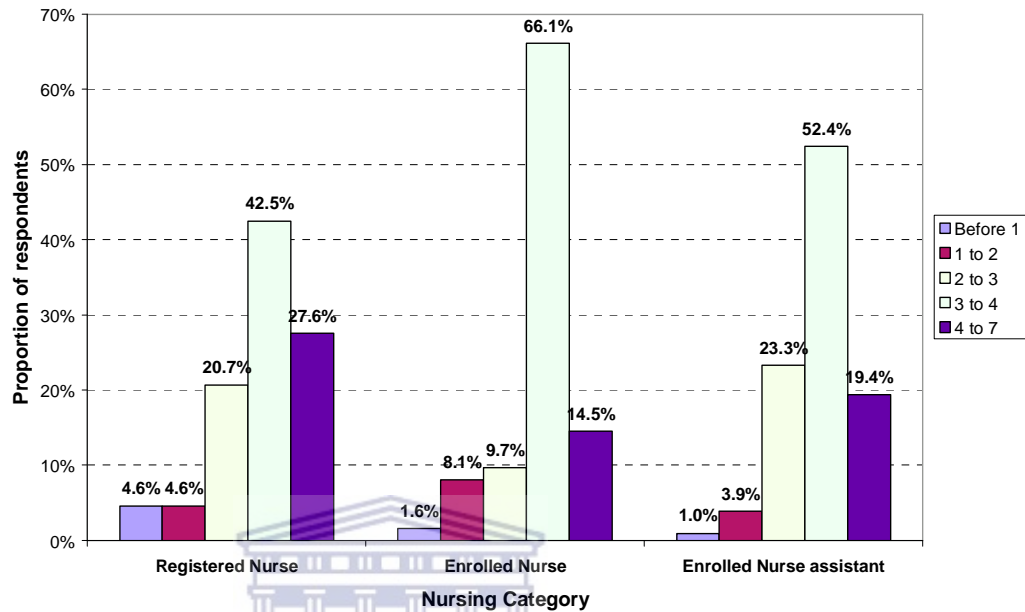


Figure 4.6: Worst time period during the night per nurse category



**4.3 SOCIAL EFFECTS RELATING TO NIGHT SHIFT (inclusive of effects on partners)**

The findings on the social effects below include family conflict, perceived needs of the family, experiences of mood changes, effects on children and the need for care of children of nurses who work the night shift, social support, and the maintenance of social and partner relationships. All these consequences and concerns were reported by the respondents working the night shift.

**4.3.1 Family conflict**

Night nurses who responded to the question of whether night shift had or had not increased conflict between them and their families totalled 262/286 (92%). It was found that 40.8% (107/262) of the nurses thought

that night shift had increased conflict with their families. Of these, 46/262 (17%) strongly agreed and 61/262 (23%) agreed that nightshift increased conflict. A total of 113/262 (43%) disagreed with this notion while 42/262 (16%) strongly disagreed. Of the comments received from 12/107 (11.21%) participants who had indicated that night shift had caused increased conflict in the relationship with their families, 8/107 (7.47%) attributed their experiences to the following two reasons:

1. The demands of the family (5/8, 62.5%):

These can be illustrated by some of the comments such as: *‘Especially with my husband because he feels he has now more responsibility with the child,’* *‘Children are very upset’* and *‘Teen daughter sick and tired of looking after younger brother.’*

2. Moodiness (3/8, 37.5%):

Conflict arising from moodiness can be illustrated by the following statements: *‘You take your frustration out on your family’* and *‘overtiredness causes irritability at small things,’* *‘I have fallouts with my spouse more when doing night duty’* and *‘Mood swings of night duty’*.

#### **4.3.2 Negative relationship with children**

Twenty per cent (38/186) who responded to the question about whether a negative change in the relationship between them (the night nurses) and their children had occurred said that night shift had brought about a negative relationship change. Those who had strongly agreed that a negative change had occurred amounted to 23.6% (44/186) of the

respondents. Of this 23.6%, those who commented on this question numbered only 7/82 (8.5%). They attributed the conflict to both:

1. The nurse's subjective feeling of frustration caused by her inability to spend more time playing and or reading to her children. A strong emphasis was placed on teenage boys and night time as vulnerable variables (4/7,57%); and
2. The unhappiness that was experienced by their children at their absence (3/7, 43%).

Forty-three per cent (80/186) disagreed that nightshift caused a negative change in their relationship with their children and 13% (24/186) strongly disagreed with this.

#### **4.3.3 Night shift longer than six months: Effect on partner relationship**

With regard to whether night shift for more than six months could negatively affect relationships with partners, 196/268 (73%) responded by affirming that they agreed that a partner relationship could be affected adversely in this way. Of these, 92/268 (34%) strongly agreed while 104/268 (39%) agreed that this could be so. Of the 72 persons who said that they didn't feel that night shift for more than six months could negatively affect relationships with partners, 14/268 (5%) were in strong disagreement while 58/268 (22%) disagreed that this could be the case (figure 4.7). The 9/268 (3.35%) who made comments on night shift influencing relationships with partners, especially if it continued for longer than six months, held following two opposite views:

1. Those who believed that it had a negative effect made comments such as night duty '*could lead to a high divorce rate*', '*left the other partner to cope with both sides of the 'nest*'" and '*leaves the night nurse 'simply' not being available to accompany her partner to functions or social outings*' (4/9, 44.4%).

2. The other view that emerged on whether the partner could be negatively affected was that the couple could be '*well adapted over many years*'. The ideas expressed were that if there is good communication and understanding between the two, and time was spent in building a relationship with the partner or if the partner worked on the same shift, then there shouldn't be a problem (5/9, 55%).

#### **4.3.4 Overall effect on partner relationship**

Similar proportions of the respondents agreed and disagreed that merely being on night duty had brought about a negative change in the relationship with their partner. A total of 107/205 (52%) strongly agreed or agreed that nightshift had negatively changed relationships and 98/205 (48%) disagreed or strongly disagreed that this was so. (figure 4.7).

#### **4.3.5 Breakdown of marriage**

The majority (179/256, 70%) of the study participants also agreed that night shift could lead to the breakdown of a marriage, with 78/256 (30%) in strong agreement and 101/256 (38%) in agreement. Fifty nine/256 (22.4%) disagreed with this idea and 18/256 (7%) strongly disagreed



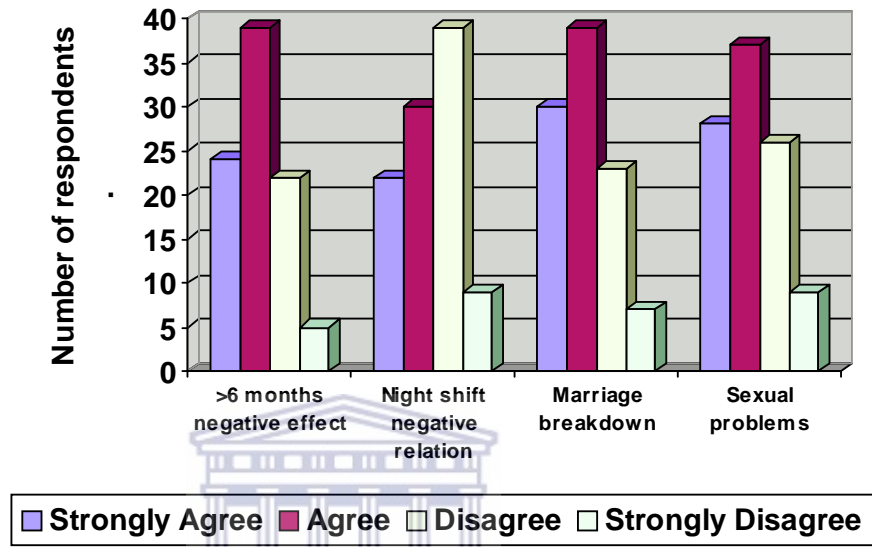
that this could be the case (figure 4.7). Viewpoints obtained from 11/256 (4.29%) of the comments made by those who were in agreement were that it had either already contributed to their divorce or the marriage breakdown of others, furthermore that husbands or wives felt lonely or neglected when spouses did night duty and that *'men preferred their wives in their bed.'*

**4.3.6 Sexual relationship with partner**

Very close to two thirds (64%, 261/286) of the respondents gave some indication of their view with regard to whether night shift could lead to problematic sexual relationships with partners. Those who strongly agreed were 28% (72/255) with a further 37% (95/255) in support of this stance. Those who disagreed numbered 66/255 (26%) and 9% (22/255) were in strong disagreement (figure 4.7). Six (8.3%), who had strongly agreed, hinted at the adverse effect on sexual relationships of the night nurse being away from her partner and offered some of the reasons for this effect as follows:

*'Because when he get home from work, then I'm going to work', 'Not enough time for closeness/mental fatigue,' 'Partners see less of each other/lack of communication,' 'Partner can have sexual relationships while the nurse is working. Sometimes nurses feel too tired to make love with partner,' 'Because sometimes they don't see each other often' and 'Because the other partner will seek for love elsewhere...'*

Figure 4.7: Effect of night duty on partner relationship



[Although the effect on partner relationships was treated in the questionnaire as a separate entity, it has been added here (4.3.3 to 4.3.6), as partner relationships responses from the study were found to form an integral link to the social sphere of life of the night nurse].

**4.3.7 Maintenance of social relationships**

Close to two thirds (161/275, 58%) strongly agreed and agreed that they were unable to maintain social relationships with friends and others while on night duty. A total of 68/275 (25%) strongly agreed, 93/275 (34%) agreed, 87/275 (32%) disagreed and 27/275 (10%) strongly disagreed that they were unable to maintain social relationships.

Two main factors which emerged from the responses of 7/161 (4.3%)

who had indicated that they were in agreement that night duty left them unable to maintain social relationships, were

1. The night nurse was too tired' to maintain her social relationships. This was illustrated by the following comments, '*When nights off I'm too tired going anywhere*' and '*I tend to sleep on my day off and prefer to be indoors on my first night after a day off*' (3/7, 43%).

2. An incompatibility in the timing' of social events and night work was indicated by the comments made by some night nurse respondents, '*not enough time*' and '*I can't attend the days the church go out because I have to work*' (4/7, 57%).

**4.3.8**

**Educational needs of children**

The study also investigated whether night nurses agreed or disagreed about whether they were unable to attend to the educational needs of their children. This study found that 60% of the night nurses who either strongly agreed or agreed that they were unable to attend to their children's educational needs. Of those who made separate comments (8/186, 4.3%) two distinct points emerged in response to the question on whether night shift made the nurse unable to attend to specific educational needs of the children.

1. The first point made was the night nurse's absence in the evening meant that they were unable to attend significant events in their children's school lives such as concerts and school meetings. Their absence from home meant too that they could not assist with homework Thus they were unable to fulfil to meet their children's educational needs

(5/9, 55.5%).

2. The second point made was that they failed to give proper support to their children. This finding was derived from the comments related to the nurse being too tired as a result of the night shift (4/9, 44/4%), *'The help you then give is in your time of sleep,' 'I am too tired to help'* and *'My children aged two and seven –I don't want them in the house when I work night duty'*.

#### **4.3.9 Health needs of children**

Fewer than half (46%, 84/182) of the respondents strongly agreed and agreed that they could not attend to their children's health needs (table 4.5).



#### **4.3.10 Social support**

About half of the respondents (120/260, 47%) said that they had insufficient social support while on night shift. Eighteen per cent (46/260) strongly agreed, 74/260 (28%) agreed. Twelve per cent 31/260 strongly disagreed that the social support they received was insufficient while 109/260 (42%) disagreed that they had insufficient social support. If the responses of those in the first category i.e. those who felt they received insufficient support were considered, it was found that those with the least social support were the ones who mostly suffered increased feelings of stress. Comments received on the question of social support revealed two significant findings.

1. Night nurses (4/7, 57%) were continuing with the required

domestic activities such as housework, cooking, conveying children etc., as usual and without assistance. One person commented that working night shift allowed more time for these activities '*even for self.*'

2. Having insufficient social support whilst on night duty was a '*burden*' and '*a major unhappiness*' (3/7, 43%).

#### 4.3.11 Need for crèche/childcare facility

Most of the respondents (213/242, 88%) strongly agreed or agreed that crèche facilities were a necessity for nurses who work night shift. It was also found that the night nurses who had agreed strongly that crèche facilities were necessary, slept the least number of hours.



**Table 4.5: Children's educational, health and crèche/childcare facility needs**

Unable to meet need:	Total responses	Strongly agree	Agree	Disagree	Strongly disagree
Educational	186	41 (22%)	71(38%)	58(31%)	16(9%)
Health	182	25 (14%)	59 (32%)	79 (43%)	19 (10%)
Crèche facilities	242	108 (45%)	105 (43%)	21 (9%)	8 (3%)

#### 4.4 WORK RELATED EFFECTS PERTAINING TO THE NIGHT SHIFT

The findings regarding the work-related aspects are described below.

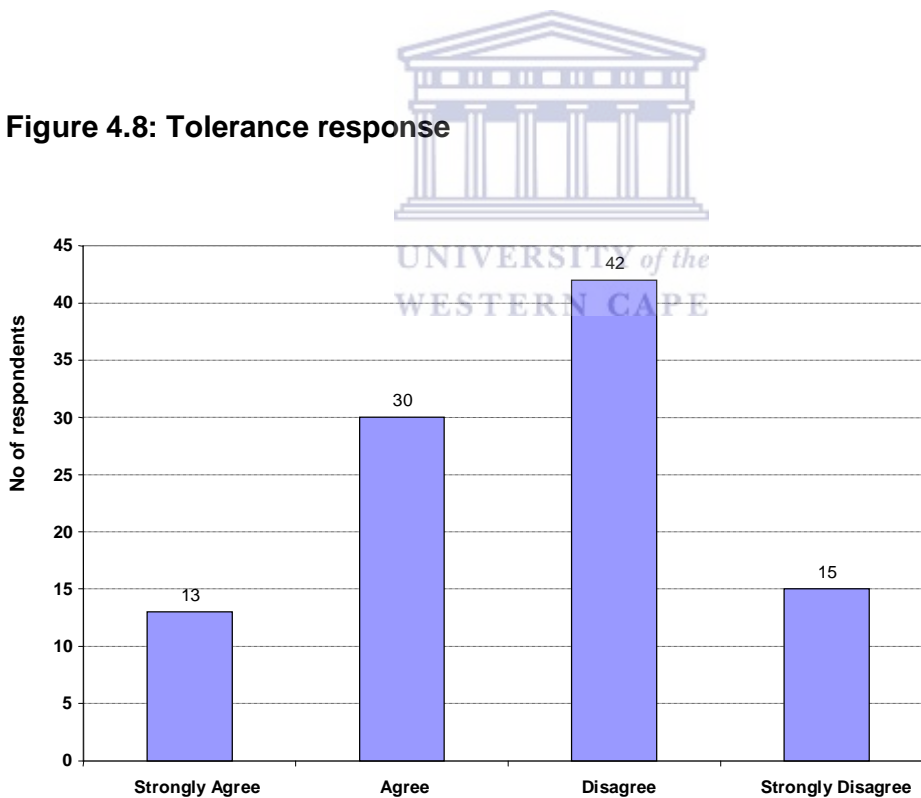
These aspects talk about the experience of stress, isolation, and fatigue, tolerance, workload, the value and the quality of night work, knowledge

about the mission of the hospital, teamwork and supervision. The reliance on professionals in decision making is also discussed as well as career opportunities on night duty and the accommodativeness of night matrons all in relation to working the night shift.

**4.4.1 Tiredness and fatigue/ tolerance**

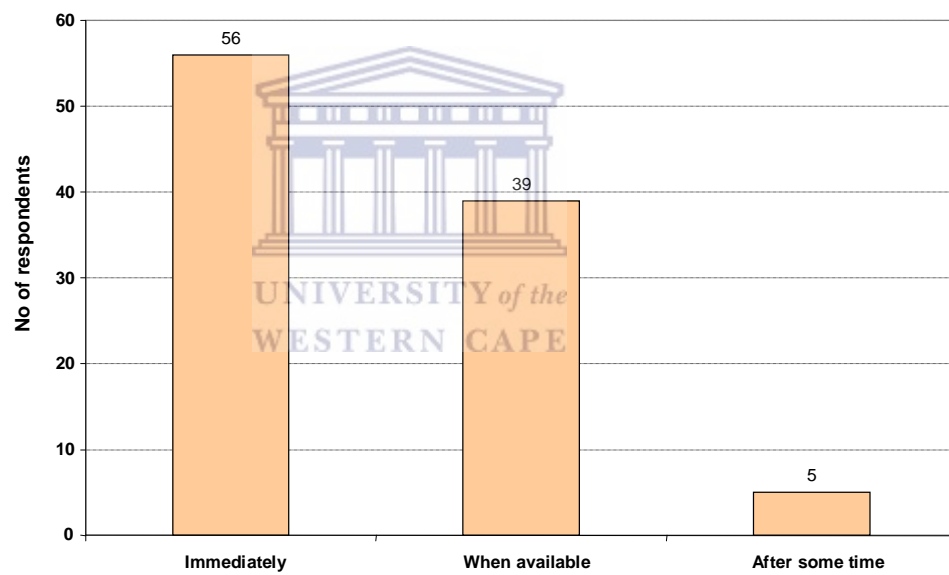
More than half of the nurses (155/272, 57%) indicated that when they were tired and fatigued, they were not less tolerant towards their patients (see figure 4.8).

Figure 4.8: Tolerance response



With regard to responding to patient calls/bells, the majority (265/278, 95%) indicated that they would either respond immediately or as soon as they were available (figure 4.9).

**Figure 4.9: Bell response**



**4.4.2 Availability of professionals to rely upon for decision making**

When asked about whether night-shift workers had fewer professionals to rely upon in a decision-making situation, very close to 86% of the respondents agreed that this was so. Of those who were in agreement, 93/243 (50.4%) agreed while 133/243 (35.2%) felt that this was strongly the case. Eight/243 (3.2%) respondents commented on this question. Despite this percentage being minimal, the researcher felt that it would be worthwhile that the comments be noted. Two (25%) of those who commented indicated that there were fewer registrars on whom the night nursing personnel could rely to make a decision. Half (4/8) of those who commented stated that there were delays in responses from those on call, especially in emergency situations, adding that '*It is the nurses who are the ones to first be on the scene when decisions need to be made*' and '*...if there is an emergency in the ward the nurses has to jump in first...*'. Sixty-four per cent (166/261) strongly agreed or agreed that nurses had adequate supervision on the night shift.

[Also see table 4.6]

**4.4.3 Stress**

This study found that those nurses who had said that they had increased feelings of stress on the night shift were the ones who said that their partner relationships were affected negatively by working night shift. Out of 274 respondents who had completed the quantitative part of the question about whether night duty as an independent variable caused



increased feelings of stress, 12 (4.3%) comments related to the following.

1. Long hours away from home (5/12, 41%):

Five of this group made reference to the *long hours away from home* and the negative changes in *mood* saying '*I tend to be moody*', '*night nurses appears very irritable*' and '*too tired*'.

2. Staffing shortages (7/12, 58.3%):

Seven related that the increase in feelings of stress was due to staffing shortages as illustrated by some of the following statements. '*When fellow colleagues don't report on duty I have to cover their areas*', '*Because we are limited to minimum staff*', '*By working with a lot of patients -only 1 EN, 1ENA*' and '*When fellow colleagues don't report on duty -- extra workload*'

The analysis of only the quantitative responses revealed that 66% (182/274) of nurses reacted to the question related to stress. Ratings in this regard indicated that a total of 85/274 (31%) had strongly agreed, 97/274 (35%) agreed, 70/274 (26%) disagreed and 22/274 (8%) had strongly disagreed that night duty increased feelings of stress.

**4.4.4 Isolation**

The question related to isolation and night shift received an 88.46% (253/286) quantitative response rate. Similar indications with regard to isolation stress were reported; 68/253 (27%) strongly agreed, 78/253

(31%) agreed, 86/253 (34%) disagreed and 21/253 (8%) strongly disagreed that night duty increased feelings of isolation.

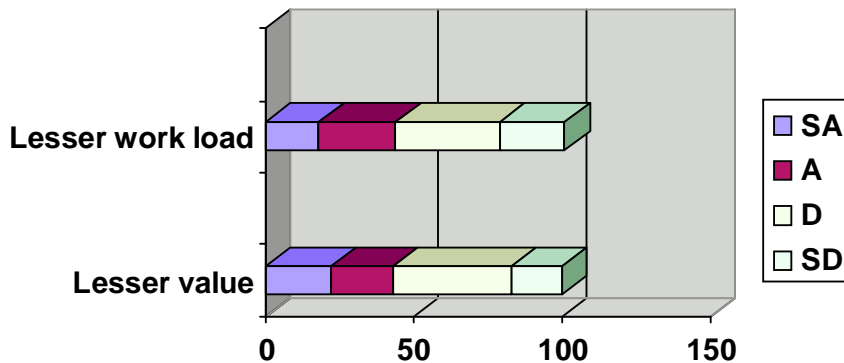
**4.4.5 Night work value**

Less than half of the respondents (115/266, 43%) agreed that a general perception existed that night-shift nursing has a lesser value than that of day shift nursing, compared to 151/266 (57%) who disagreed that this was so. In this regard 12/13 (92.3%) who commented on the question, refuted the perception of night shift as having a lesser value, as some qualified their answers as follows, '*You do less work, not work of less value*', '*We give the same care at night as we give during the day*' and one very definite statement '*That perception must be killed.*'

**4.4.6 Workload**

With regard to whether night-shift nursing had a lesser workload, 114/261 (44%) strongly agreed or agreed that this perception did exist (figure 4.10). In addition 15/261 (5,7%) commented. Sixty per cent (9/15) indicated their agreement with some of the following statements; '*Some wards are very busy at night with only two to three nurses*', '*In the morning its very hectic/loads of work*', '*Because of fewer staff the workload is more*' and '*There are certain nights when we are having OT's emergency intake, TOPS.*'

**Figure 4.10: Perception of night duty nursing having lesser value and lesser workload**



#### 4.4.7 Teamwork and the allocation of senior nurses

Teamwork did occur on the night shift as 68% (181/269) strongly agreed or agreed with this statement (table 4.6). Three quarters of the night nurses (192/253, 76%) were in agreement that senior nurses were to be allocated to night shift.

#### 4.4.8 Knowledge of Hospital Mission

Of a total of 267/286 (93.35%) of the night nurses who responded to the question about knowledge of the mission of the hospital, 222/267 (83%) strongly agreed or agreed that night nurses have the same knowledge and understanding (about the mission of the hospital) as day nurses. Forty-five nurses (17%) indicated differently; with 35/267 (13%) in disagreement and 10/267 (4%) in strong disagreement that this was the case.

**4.4.9 Toughness and endurance**

Night nurses were largely in agreement that night-shift nursing required more toughness and endurance with 48/260 (19%) in strong agreement and 111/260 (43%) in agreement. Eighty seven (34%) of the 260 respondents indicated that they were in disagreement while 14/260 (5%) were in strong disagreement that to be on the night shift required more toughness and endurance.

**4.4.10 Accommodativeness of night matrons**

In response to the question whether night matrons were accommodating to the needs of the night nurses, 18/254 (7%) nurses strongly agreed whilst 108/ 254 (42%) said that they agreed that this was so. A more or less equal amount indicated that night matrons were not accommodating; hence the overall findings were that 50% agreed and 50% disagreed (table 4.6). Twelve (4.7%) nurses also commented on this statement.

**Table 4.6: Teamwork and involvement of senior personnel**

	N	SA	A	D	SD
Fewer personnel to assist with decision making	264	93 (35%)	133 (50%)	31 (12%)	7 (3%)
Teamwork easier on night duty	269	69 (26%)	112 (42%)	68 (25%)	20 (7%)
Allocation of Senior nurses	253	50 (20%)	142 (56%)	40 (16%)	21 (8%)
Adequate supervision present at night	262	20 (10%)	141 (54%)	75 (29%)	20 (8%)
Accommodative of night matrons	254	18 (7%)	108 (42%)	85 (34%)	43 (17%)

#### 4.4.11 Preferred shift length

The findings on the question of how long a night shift should be, showed less preference for the 10 and 12 hour shift (31/267,12%; 37/267,14% respectively). Most of the respondents indicated that shifts should either be eight hours (110/267, 41%) or 12 hours long (88/267, 33%). (table 4.7)

**Table 4.7: Preferred shift length**

Hours per shift	8	10	11	12
N267 (n)	110	31	37	88
Percentage	(41%)	(12%)	(14%)	(33%)

**4.4.12 Shift length related to transport and safety**

Study participants were asked that should their preferred shift length (as indicated by themselves) have been an option for them, would they be affected negatively in terms of transport and safety. Fifty three of 240 respondents (22%) specified that they strongly agreed that they would be affected negatively in terms of safety. Ninety nine (41%) indicated that they agreed, 77/240 (32%) disagreed and 11/240 (5%) were in strong disagreement. The question directly related to transport that inquired whether nurses working night duty could be negatively affected, was responded to by 237/286 (83%). Although this question related to safety, the predominant aspect which emerged from 12/240 (5%) comments revealed that the 'safety' aspect was dependent on the availability of transport or the need for transport to be provided by the hospital. This reference to travelling at night with the associated high crime rate in South Africa was highlighted by the following comments'...*travelling will be more dangerous at that time of morning*' and '*...the roads are quiet, hijacking increased.*' One hundred and two of 240 (43%) agreed that they would be negatively affected if there was an option to work the shift length they had indicated, while 58/237 (25%) strongly agreed that this would be the case. A similar proportion of 27% (65/237) disagreed with 5% (12/237) in strong disagreement.

**4.4.13 Quality of work**

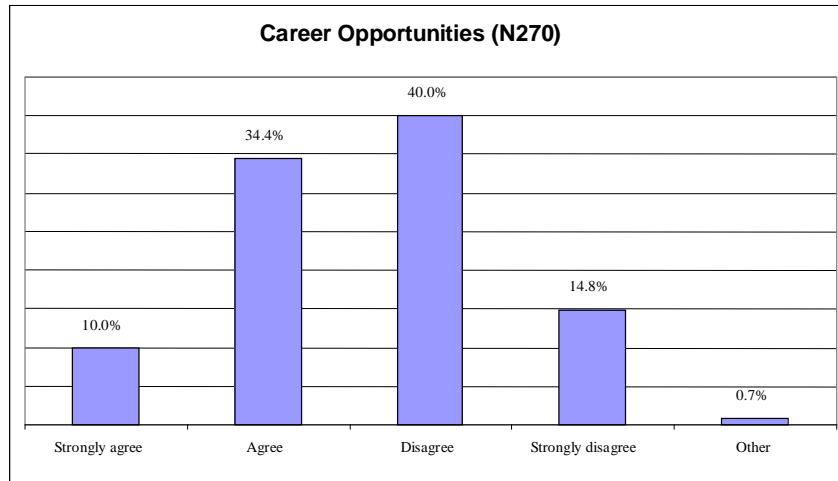
Most nurses (254/273, 93%) agreed that night nurses cared about the quality of work delivered on the night shift, in the same way as when

they were on day duty. Forty five per cent (123/273) indicated that they strongly agreed and 131/273 (48%) indicated that they agreed that this was so. Seven per cent (19/273) disagreed or strongly disagreed with the statement.

**4.4.14 Career opportunities**

The indication obtained from the participants with regard to whether enough opportunities existed for night nurses to further their careers, 108/270 (40%) disagreed with this while 40/270 (15%) strongly disagreed that these opportunities existed on the night shift (figure 4.11). Twenty seven (10%) of the respondents indicated that they strongly agreed that there were sufficient career opportunities for them on the night shift while 34% (93/270) indicated that they agreed that this was the case. All of the 9/270 (3.3%) comments made suggested that career opportunities for those working on night shift were limited or non-existent, but that situation didn't differ too much from the situation on day duty. They cited various reasons namely, that the night nurse is '*unable to sleep most of the time during the day then being too tired*,' '*...very upset; upgrading -- 53yrs old*,' '*What has been offered!!!*' and '*We on night duty don't get any info about courses advertised*'

Figure 4.11: Career Opportunities



**4.5 SUMMARY OF CHAPTER**

This chapter analysed the quantitative data and comments obtained from the completed questionnaires. These questionnaires focused on the physical, social and work related aspects of night-shift nursing with questions encompassing the demographic information and the preferences and choices of the respondents. The analyses have been presented descriptively making use of graphs and tables. Overall the question/statement that was responded to the most was the question of responsiveness to the bell (280/286, 97.9%), which was closely followed by the question on ‘hours slept’ (278/286, 97,2%), whilst the question that elicited the least answers/responses was the question with regard to transport which yielded an 82.8% (237/286) response rate.



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## **Chapter 5**

### **DISCUSSION, RECOMMENDATIONS AND CONCLUSION**

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#### **5.1 INTRODUCTION**

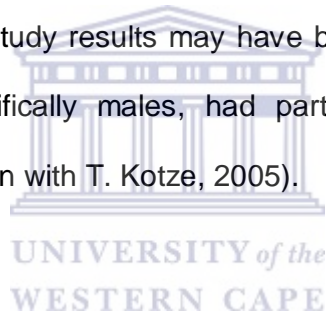
This study has arrived at a number of insights through its analysis the data gathered from the reports of respondents regarding their experiences of night-shift nursing. The format of the discussion chapter predominantly follows a similar format and sequence of that which was used for chapter 4; however some of the discussions have incorporated appropriate literature on the physical, social and work-related aspects of night-shift nursing in relation to the findings of this study. The limitations of the study have been listed followed by the recommendations. The recommendations are based on the findings and the notable information in the discussion chapter. The researcher concludes this chapter with a conclusive summary.

#### **5.2 DISCUSSION ON DEMOGRAPHIC DATA**

This study of the experiences of night nurses required an 'adequate' sample size of a minimum of 80% respondents (n256/320), to render it valid. The study however delivered a sample participation of 89% (n286/320) rendering the survey valid as well as appropriate and representative [Burns and Grove (1998: 237 & 247) view 80% as a

representative sample].

The female nurses who participated in this study outnumbered the male participants by 91% to 9%, a ratio of 10:1. Although the number of males who took part in this study was disproportionate to that of the number of females, female nurses in South Africa also outnumber the males with a ratio of 14:1 (172,332/12,127), with the provincial ratio more so, in that female nurses outnumbered males by 23:1 in the Western Cape [24,243 females nurses/1,072 male nurses] (SANC: 2004). The study results may have been different if larger numbers of nurses, specifically males, had participated in this study (Personal communication with T. Kotze, 2005).



The advertising of the study in the hospital prior to the field work appears to have had advantages in that 319/320 night nurses accepted the questionnaires in a positive manner. After the study had been conducted, gratitude was expressed by some of the respondents at being included in a study of such a nature. The assistance of the registered nurses in the distribution of the questionnaires also contributed positively to ensuring that all who were on duty had an opportunity to participate, and in this manner a high participation rate was achieved. Substantial numbers of nurses from the three categories, and representing all six major clinical areas of the hospital, participated

in this study. Use was thus made of a conveniently available and representative sample of nurses. Hence, for the purposes of this study, the 'convenient sample' proved 'effective and efficient' (Burns and Grove, 1998: 237).

This study found that the major portion of the night nurses (79%) were in the age range of 30 to 49 years. A further 10% were between 50 and 59 years of age. Very close to half (49%) were married with children. These findings are similar that those of Brooks (1999b:347) and Totterdell et al. (1995, 43). Although the study by Brooks had not specified age, he referred to the age profile of night nurses 'with family responsibilities', as certainly differing from that of day nurses. Totterdell et al. (1995, 43) agreed that nurses who worked on the permanent night shift were found to be significantly older.

In this Western Cape study, more than a third (40%) of the participants who wanted to be on the night shift the majority (91%) was female. Of these, close to 20% had worked night shift for more than 24 months. In relation to the various periods of night shift, with the largest proportion (70%, 174/250) of respondents being on night shift for a period of six months or less, it could be concluded that the largest proportion of nurses do rotate between night shift and day shift. However 19% (the second largest group) could be equated to Brooks'(1999b:347) 'considerable' number as it is this group of nurses who had worked night

shift for the longest period of time (more than two years).

The demographic results of this study with regard to age and its associated life phase, choice of shift, gender, length of night duty and the proportion of the group who preferred to work night shift, are similar to the findings of an ethnographic study conducted by Brooks (1999b:347) on a night nursing culture; ‘...permanent night shift remains an attractive way of life for a ‘considerable’ minority of nurses almost entirely female, with family obligations’ (Brooks, 1999b:347).



### **5.3 PREFERENCE and CHOICE OF DOING NIGHT DUTY**

Despite more than half of the respondents in this study (53%) indicating that they preferred to work day, two thirds (66%) were ‘allocated’ by management to work the night shift with the other third (33%) of the participants working the shift for ‘convenience’, ‘financial and study’ purposes. It was evident from the views of some of these participants how convenient and necessary working night shift was for them, while others expressly revealed their dislike for night shift which they regarded as undesirable. The latter was similar to Cowins’ (2002:40) findings where the respondents said that ‘Night shift was far from coveted.’

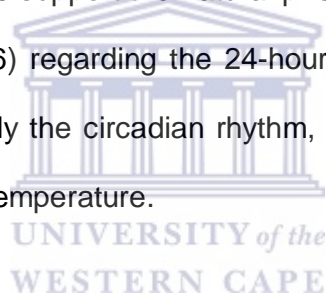
Despite the night-shift allowance being said to be ‘laughable’ and ‘disgracefully too little’, with nurses not desiring night shift but being

allocated to it, there were still those who looked upon the night duty shift as a calling with the view that '*someone has to look after the patients.*'

## 5.4 PHYSICAL ASPECTS OF NIGHT DUTY

### 5.4.1 Circadian rhythm adaptation and sleep

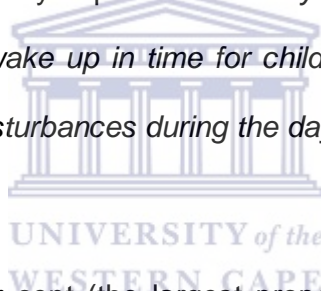
Fifty-five per cent of the respondents found that their body's circadian rhythm could adapt, while just less than half (46%) indicated that they could not adapt to having to sleep during the day and work at night. These findings support the natural phenomenon proclaimed by Monk (in Slon,1997:106) regarding the 24-hour physiological processes of living beings, namely the circadian rhythm, which is said to be modulated by sunlight and temperature.



Evidence from this study confirms the notion that sleep disturbances are related to working the night shift in that almost two thirds of the night nurses experienced sleep disturbances with a quarter not being able to sleep for more than four hours during the day. Similarly, Westfall-Lake and Mcbride (2000:25) and Niedhammer, Lert and Marne (1994:667) have shown that disturbances in the circadian rhythm of shift workers resulted in problems such as sleep disturbances.

This study has revealed that the overwhelming majority of night nurses

are women. Given the fact that the respondents were 91% women and that very close to a quarter could not sleep for even four hours during the day, these findings might have been predictable if the findings of Robson and Wedderburn in Costa et al.. (1989:137) are considered. They said that women, by virtue of the fact that they hold 'two jobs', particularly suffer from loss of sleep. This was the case with 4/11(36%) respondents of this study. The researcher also discovered that it was the external physical factors that also contributed to the reported poor sleep during the day. The following statements illustrated the external sleep disturbances they experienced: '*Very noisy area –school just down the road,*' '*must wake up in time for children to be fetched or come home*' and '*lots of disturbances during the day.*'



Forty-nine per cent (the largest proportion) of the nurses in this study were married. Furthermore, this study's findings showed that a large majority of night nurses (84%) slept for various lengths of time during the day, but not longer than 6 hours. The findings in this study that a night nurse sleeps less hours is supported by Gadbios, in Reinberg, Vieux and Andlauer (1981) who studied nursing auxiliaries and found that married women night-workers with children slept for one hour and 20 minutes less in the daytime than their single counterparts because of their need to send their children off to school and embark on housework.

**5.4.2 Health problems related to the working of the night shift**

An interesting finding of this study was that the respondents indicated that neither they, nor their children, were worse off healthwise as a result of their having embarked on the night shift. The findings show that three quarters of the respondents felt that night shift did not result in more health problems. This study revealed that sick leave was not a common occurrence and was only taken as needed as 37 per cent of the night nurse respondents indicated that they had been off sick between one to three nights only. The two per cent (3/5) who had indicated that they had been off sick for more than eight nights, were 'nights off sick' due to surgery or another major affliction requiring a long period of recovery. In support of this, almost half (46%) revealed that they had not been absent due to illness in the entire six months prior to the study, whilst on night shift. These findings contradict those of Westfall-Lake and McBride (2000:25) who said that shift workers had more health problems than day workers. It also differed from the findings of Slon (1997:106) who contended that health problems and shift work were related as nightshift workers tended to be more susceptible to colds and flu because their immune system appeared to be weaker (Slon, 1997:106).

The comments from a small proportion (6.06%) of the respondents in this study about the negative health effects which they had specifically experienced, pointed to three physiological areas namely the respiratory system, sleep and exhaustion and aches ('*headaches*' and '*body*

aches'). These findings differed from the report of Alward (in Kaldy, 1996:16) in relation to the health of night workers. The latter claimed that the second biggest problem following sleep disorders/disruption suffered by night nurses was gastrointestinal.

#### **5.4.3 Weight gain**

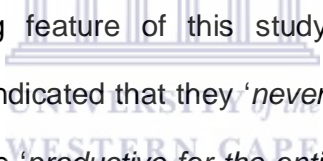
Very close to half of the number of respondents of this study (130/263, 49%) revealed that they had gained weight while on the night shift. [A quarter (69/263,26%) indicated that they had neither gained nor lost any weight, while the other quarter indicated that they had lost weight]. A possible reason for the reported weight gain may be because of working the night shift, a change in eating habits and associated sleep disturbances. The fact that the working of night shift does lend itself to the increase in the intake of snacks, sweets and starches as well as the lack of daily exercise might be contributory factors. It has also been noted that the time lapse between the last meal viz. breakfast and bedtime for the night nurses was much shorter, which may lead to the weight gain.

#### **5.4.4 Worst time period on the night shift**

It is evident from this study that the period between 03h00 and 04h00 was regarded as the worst physically, as more than half of the respondents (52.4%) indicated this to be so. The hour just immediately prior to 03h00 as well as the hour immediately after 4h00, fared equally poorly, with 40% (20% and 20% respectively) of the respondents



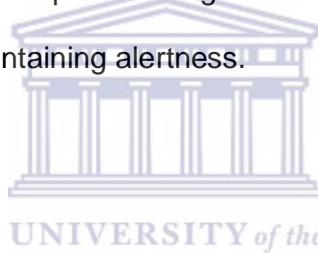
indicating this period to be their worst. It can thus be said that the eighth and tenth hour into the shift, apart from the obligatory 30 minutes meal-break taken by most of the respondents, has been indicated to be physically bad with the ninth hour [i.e., between 03h00 and 04h00] being the worst, as indicated by the majority of the respondents (figure 4.4). The night nurses (all categories) who said that their worst time during the night was between 03h00 and 04h00, were those who had been working night shift for more than two years. Additionally, the registered nurses who worked night shift for more than 24 months were the worst affected by the 03h00–04h00 time period.



An interesting feature of this study's findings was that 3 of 266 respondents indicated that they '*never*' had a 'worst' time, were '*always alert*' and were '*productive for the entire 12 hours*' of a night shift. Two of 266 respondents felt that they felt physically the 'worst' the entire shift period. In keeping with the discussions of tiredness, this study also revealed that more than three quarters of the respondents said that they needed more time to make decisions when they were tired and fatigued. These feelings could be equated to the phenomenon of constant fatigue described by Slon (1997:107).

Although this study did not investigate night shift accidents and its associated times of occurrence, the question that should be asked as a

result of the findings is whether there is an association between the indicated worst ninth hour and the preference that 41 (2%) of the respondents have for the eight-hour shift. This study does reveal that during the latter part of the shift, alertness would be at its lowest. It could thus be said that the decrease of alertness is as a result of the long and continuous period the night nurse and night-shift worker might be expected to work. It is therefore important that recommendations of this study should take into account that Folkard and Macdonald (2003:680) and Slon (1997:106) identified that accident risks increase during the latter span of a night shift. Regular short breaks could be a method of maintaining alertness.



## **5.5 DISCUSSION ON THE SOCIAL ASPECTS**

### **5.5.1 Conflict between worker and family**

This study found that a smaller number of nurses, namely two fifths (107/262) agreed that conflict existed between them and their families whilst very close to one third of the respondents emphatically agreed that conflict existed between them and their children specifically as a result of their having to work night shift. Their comments make clear that both husbands and children complained about their being deserted and that the wives/mothers did not have time for them. As indicated under point 4.3.1, the conflict centred on two factors:

1. The family's expectation that the domestic responsibilities would

continue to be maintained by the respondent and,

2. The moodiness of the respondents because of working night shift.

### **5.5.2 Partner relationship**

The findings of this study indicated that almost equal proportions of the respondents agreed and disagreed that being on night duty had brought about a negative change in the relationship with their partner. Despite these seemingly balanced responses, the researcher contends that the effect of night shift on the relationship the worker has with her partner does appear to be a very important aspect of the worker's life. This is supported by the fact that a number of researchers have already made reference to its resultant effects. In this research the comment '*Men prefer their wives in their bed*' was significant in this regard. They also indicated that closeness between partners could be affected in a number of ways as night shift causes partners to see less of each other and in this way communication can be affected. Furthermore it was indicated that the intimacy/sexual relationships could also be adversely affected because of a partner's tiredness, lack of energy and availability. The respondents indicated that the 'non-availability' of one partner could lead to the breakdown of marriages and a high divorce rate; the latter also resulting in one partner being left to cope alone in the marriage 'nest'.

The present study revealed that very close to three quarters (196/268, 78%) of the night nurses agreed that working night shift for more than six

months could affect relationships with partners negatively. A comment of one of the night nurses illustrates this –*'I have fallouts more with my spouse when doing night duty.'* However the lone voice of one respondent sounded a very different note. She claimed that the experience of working the night shift, even for more than six months, is not necessarily negative as *'one could be well adapted over many years'* and that *'if there is good communication and understanding between the two'* and *'time was spent in building a relationship with the partner'* or *'if the partner works on the same shift, then there shouldn't be a problem'*.

### **5.5.3 Maintenance of social relationships**

In relation to isolation from social contact, this study found that slightly less than 60% of the respondents strongly agreed/ agreed that they were unable to maintain social relationships with friends and others. The respondents indicated that they were too tired to be out socially (maintain social relationships) when they were off duty and in order to make up for the tiredness of working night duty, they would sleep/or prefer to stay indoors. These findings corresponded with that of Westfall-Lake and McBride (2000:25), who indicated that friends and community groups related to the night/shift worker had difficulty in following the constant revolving shift cycles of shift workers, resulting in shift workers eventually losing out on social events. The comment of one of the night nurses in this particular study was *'I don't meet any friends.'* This loneliness and isolation related to the nature of the job was labelled by Monk (in Slon, 1997:107) as one of the social 'curses' of

night-shift work.

#### **5.5.4 Educational needs of children**

The majority (60%) of the nurses in this study agreed that they were not able to care for their children's educational needs. The respondents who commented on this referred to two aspects of their children's educational needs namely:

1. The need for their physical presence such as attendance of school concerts, meetings and assistance with homework.
2. School-going children need specific assistance along with tolerance (see above examples), the day often at precisely the time when the respondent needs to sleep. This results in a direct clash of these two needs.

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#### **5.5.5 Health problems of children of the respondents**

Responses with regard to the health needs of the children of night nurses surprisingly revealed that more night nurses (54%) felt that they were able to cope. The researcher would have expected a higher proportion to indicate that they were not coping with the health needs of their children and working the night shift simultaneously.

Hence the findings of smaller proportions in both:

- 1). The experiencing of health problems themselves and
- 2). The ability to cope with the health needs of their children might be

so purely because this study was conducted with night workers who were also nurses. Caring for others is a first-line health function of these people and thus all the more so for their children. This might have been different had the night-shift workers been from another field such as machine operators.

**5.5.6 Need for childminder and crèche facilities**

Even though thirteen per cent of the respondents indicated that they do not have children, this study showed that child minder and crèche facilities were seen as a necessity by eighty eight per cent (213/242) of night nurses. This was also evident from the views of some of the night nurses, that they didn't have adequate arrangements and/or facilities were not in place for those who needed them. Two of the comments indicated that husbands/partners also work (in one instance, would be away for up to three weeks) hence the task of and a facility for 'caring' for their children was a necessity. Another three of the eight nurses who commented on this aspect, indicated that their partners were also working night shift and at times it was required of both to be at work simultaneously, which left them in need of a childminder and/or overnight facilities for children as the need arose. In this regard, the respondents revealed that it is a *'problem' finding a babysitter'*, further that *'all nurses do not have adequate childminders (children to be safe)'* and that *'one needs to feel at ease when at work.'* While it was evident that respondents needed to sleep during the day, this study revealed that nurses would be looking after their children hence the findings of

this study which showed that the night nurses who had agreed strongly that crèche facilities were necessary, slept the least number of hours. The researcher agrees with the report of Work and Family Newsbrief (2000) who found that overnight childcare is still an unanswered problem.

## **5.6 DISCUSSION ON WORK RELATED ASPECTS OF NIGHT SHIFT NURSING**

### **5.6.1 Tiredness and fatigue associated with tolerance for patient needs**

It might be reassuring to know that more than half (155/272, 57%) of the respondents in this study disagreed with the notion that when they were tired and fatigued, they were less tolerant in terms of their response to patients' calls/bells. The majority (265/278, 95%) said that they responded to patients' calls/bells either immediately or as soon as they were available, though the time period as to how long it takes to become available was not determined. The only pattern that emerged from the respondents' comments indicated that if the bell was not answered immediately, something else of priority would be holding their attention. The single emerging pattern that evolved from the open-ended question of whether less tolerance to patient care came about when a nurse on the night shift was tired and fatigued was that of beneficence. This is illustrated by respondents who stated the following, '*I do my best for my patients*', and that even when they found themselves tired and fatigued, they stayed '*awake and active*'. Further comments that illustrated

beneficence were 'At work the patients come first even when you are tired', 'The main reason for being on duty is for 'patients needs' whilst another said 'I can remain tolerant as I have the ability to fight it (tiredness) off.'

### **5.6.2 Availability of professionals to assist with decision making**

The respondents in this study singled out the labour-ward doctors for their timely availability and readiness '*doctors are always available in the labour ward*' as opposed to what other night nurses had experienced, the latter illustrated by '*people who are on call always take their time to respond to a call.*' The interesting finding of this study is that eighty-six per cent (243/226) of the respondents acknowledged that there were fewer professionals that could assist in a decision-making situation at night, yet the same percentage claimed that they had adequate supervision.

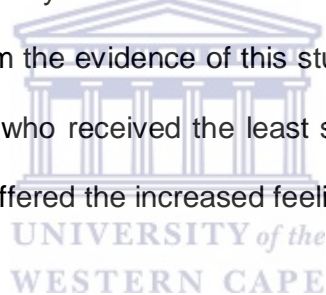
The fact that fewer professionals who could assist in decision making at night are available, could be equated to the study of Brooks (1999b:347), which also reported this. The study by Brooks (1999b:347) however specifically reported that doctors were included in the professionals who were less available.

### **5.6.3 Feelings of stress and isolation**

Two thirds of the group of night nurses involved in this study felt that night shift increased feelings of stress while just fewer than sixty per cent



agreed that feelings of isolation were increased when on night duty. The statement '*You take your frustration out on your family*' from a nurse in this study is certainly an indication of feeling stressed. Half of the respondents in this study (120/260) also indicated that they had insufficient social support while doing the night shift. The respondents also labelled the fact they were required to work at home after a night shift a '*burden*' and '*a major unhappiness.*' In this regard the researcher is in agreement with Gadbios in Reinberg, Vieux & Andlauer (1981), who said that the conflict which comes about for night nurses as a result of the 'domestic' day and conventional night job roles, is equally stressing. Therefore from the evidence of this study, it can be said that the nurses on night shift who received the least social support were the ones who had mostly suffered the increased feelings of stress (illustrated in 5.5.3).



Ironically, a single respondent commented that she preferred to do night shift as her perception was that there was less stress on night.

#### **5.6.4 Value and quality of night nursing**

Night nurses from this study overwhelmingly (93%, 254/273) indicated that they cared about the quality of work in the same way as when they were on day duty. They refuted the fact that a perception existed that night duty nursing has a lesser value saying that good quality care is rendered at all times and that being on night/day duty doesn't change one's dedication to the profession. Another comment was '*that is what nursing is about*' referring to 'quality.' This study also found that close to

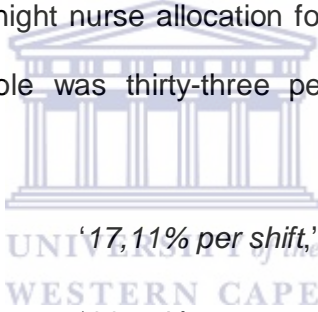
two thirds of the respondents (151/266) refuted the statement that a perception existed that night-shift nursing has a lesser value than that of day shift nursing (see 4.4.5). Other diverse responses to this statement alluded to the fact that night-shift nursing would not be perceived as having a lesser value if there were the same number of nurses on night as on day duty. The assigning of 'value' was also dependent on which area a night nurse was working in, as it could be quiet or busy (with busy being an erratic variable and thus being equated a higher value). Another view in support of the equal worth of night duty to day duty is that the work is less on night shift, not of lesser value. An assessment of the answers to this open-ended question revealed that the respondents in some cases had associated 'value' and 'workload,' even though this was not stated by the researcher. These comments included '*We do not have the same workload in 24 hrs,*' '*Night shift is always...few personnel,*' '*There is not a lot of nurses on night duty*' and '*More work on night duty.*' Night shift 'value' was also related to the money. It was said that if night duty had been given a higher value, then nurses would be financially better rewarded for the unsociable hours worked.

#### **5.6.5 Workload**

With more than half (56.3%, 147/261) of the night nurses in disagreement with the statement that a perception existed that night-shift nursing has a lesser workload, it also evoked more comments than the rest. The 'early morning' load was referred to as being '*heavy loads of work*' as well as the ratio and staffing 'in certain departments it is no

lesser' and 'some wards are very busy at night with only two to three nurses.' In a similar manner Brooks (1999b:347) and Hubbard (1997:28) found that supervisors were left with inadequate human resources with which to work and that the night-shift patient allocation was more, with an estimation from his (Hubbard's) study which indicated that this number was often in excess of ten, as opposed to about six patients being allocated per 'day equals'. At the time of this study, the number of nurses allocated to the night-shift service, was 320/1361 (23.5%), (GSH, 2004).

The average night nurse allocation for four other hospitals in the Cape Town metropole was thirty-three per cent, derived from their data, namely:

- 
- Hospital no. 1. '17,11% per shift,'  
Hospital no. 2. '33,5%,'  
Hospital no. 3. 'Full complement,'  
Hospital no. 4. '30%, '17%, both shifts = 33%, and  
Hospital no.5 'Professional nurses -17.75%, nursing assistants – 37.6%' (NMC, 2004) [email correspondence with individual hospitals, 2004].

#### **5.6.6 Teamwork**

A positive feature of the night nursing 'culture' from the literature appears to be that teamwork occurs more naturally. In this study there were respondents, deducing from their responses, who might have

interpreted this statement either as 'obligatory' or as 'situational', as more than one said that '*night nurses are forced to work together.*' Other respondents in this study indicated that '*staff work closely together*' and that '*team-working happens anytime.*' These findings confirmed those of Zemke (2003:10) who showed evidence of deliberate attempts at teamwork by night workers. More than two thirds (almost 70%, 181/269) of the night nurses in this study agreed that teamwork happened more easily on the night shift as opposed to a third (32%, 88/269) who indicated differently as comments in this regard related to the fact that it would depend on the team and with whom you are working.



Even though one comment made was that '*nurses are generally too tired to work as a team*', the researcher asserts that there is a general collaborative teamwork spirit present. This was deduced from all the responses in agreement with the question regarding teamwork (181/269, 68%).

#### **5.6.7 Allocation of senior nurses**

Although senior nurses are allocated to night duty, when the question was asked whether senior nurses should be allocated to the night shift, three quarters of the night nurses (192/253, 76%) were in agreement. This study however did not specify what level of senior nurse hence comments in this regard were varied. However, some of the comments

expressed were that all categories of nurses are needed on night duty as well as the fact that all nurses need exposure to night duty. It was the view of some nurses that the allocation of senior nurses to the night shift would help *'to bring supervision skills,'* whilst it was also viewed by some as assisting the seniors to *'...understand the plight of night nurses.'*

**5.6.8 Knowledge of mission of the hospital**

In response to question about the knowledge of the mission of the hospital, very few comments were received. The quantitative part of this question was overwhelmingly responded to by 83% (222/267) of the respondents. They claimed to have the same knowledge and understanding of the mission of the hospital compared to day nurses. These findings differed from the aspect in the literature review with reference to *'teamwork and the corporate mission,'* (point 2.4.8), which specified that night workers focused more on the quality and quantity of their physical output while their theoretical mission was found to be less of a priority (Zemke, 2003:10).

**5.6.9 Toughness and endurance required for night duty**

More toughness and endurance was required for night nursing than day nursing were the findings from almost two thirds (159/250) of the respondents of this study. The comments made by the nurses ranged to the extreme, which were that toughness and endurance were required *'at all times'* to *'the same'* extent as in day nursing. The researcher recognised in retrospect that the night nurses' perception of toughness

and endurance could be related to a wider variety of aspects. In this regard some comments were related to workload and implied that the bigger the workload, the more toughness and endurance were needed. This was illustrated by the following responses '*workload is basically the same in the unit*' and '*strongly agree - less staff, huge workload and extra areas to cover.*' Respondents made further reference to coping with fatigue, staffing and domestic aspects with a specific comment from one respondent stating '*the fact that it is night, we are more focused.*' These findings correlated with that of Brooks (1999b:347) who found that night nurses were proud of their capability to work the long and demanding shifts of night duty and claimed that they had got to be different to endure under abnormal conditions.

**5.6.10 Night matrons/supervisor and support from other professionals**

This study found that night nurses experienced night matrons to be almost equally accommodative and un-accommodative. Most of those who agreed to having experienced accommodativeness from the night matron stated that accommodativeness occurred '*sometimes.*' Half of those who disagreed, (3/12, 25%) didn't respond to the question of the 'accommodativeness' of the night matron, but rather to 'responsiveness' they experienced. They found '*short staff/no appreciation,*' '*very rarely give us praise*' and '*needs to be friendlier.*'

**5.6.11 Shift length (associated with transport and safety)**

Despite 41.2 per cent of the respondents in this study having indicated that the night shift should be eight hours long, further associated findings related to shift length showed that close to two thirds (152/240) said they would not be safe should they be required to commute at odd hours. Well over two thirds (160/237) further indicated that their transport arrangements would be compromised.

Respondents revealed repeatedly how dangerous it is to travel on the roads after regular office hours. Some also listed the problem they have, in that they have no transport of their own. They further claimed that it is *'not safe to travel during the night even if you have your own transport.'* A strong perception existed among the respondents that transport should be supplied by the hospital for example, *'lesser problems if hospital arranges transport,'* so that *'continuum of care can be provided'* while one respondent made mention of the *'contract transport'* that she made use of.

From 41 (41%) of responses, the eight-hour shift (though not currently worked on night duty at this hospital) appeared to be the most attractive shift, whilst the ten-hour (31/267, 12%) and 11-hour shift (37/267, 14%) were the most unpopular. The second most popular shift indicated by a third of the respondents (88/267) was the 12-hour shift.

As indicated earlier in the background to this study (point 1.1.1), the duration of night shift is from 19h00 to 07h00 at the designated hospital where the research was conducted and at the other hospitals in the province (Nurse Manager Committee, 2004). It is evident from the above that the length of night shift, the problem of transport and the safety of the night nurse, are closely interwoven. It has to be realised that should decisions be made with regard to one aspect of this matter it would have an influence on the other. Hence if some consideration is given to changing the shift, transport and safety aspects must be taken into account.

**5.6.12 Career opportunities**

More than half of the respondents (148/250, 55%) said that career opportunities were limited or did not put them in a position to further their careers. A smaller number (102/250, 44%) disagreed with this notion. Some frustration was expressed with this situation. The comments pointed blame at the administrative system for their (respondents) being left out both for personal reasons and because of the negative effect the night shift has on 'time.' The respondents also claimed that with regard to career opportunities on the night shift that '*communication with management is limited*' further stating that '*we on night duty don't get any info about courses advertised.*' One respondent, who agreed that there were no career opportunities on night shift, said that there were also none on the day shift. However, it could be said that the night



nurses were found to have more negative perceptions with regard to career opportunities. According to the literature, this could in turn influence commitment to nursing as nurses who were found to have positive perceptions of career development opportunities were those who would be more committed in the future (Brooks & Swailes, 2002:117).

## **5.7 LIMITATIONS OF THE STUDY**

The questionnaire:

5.7.1 The researcher realises that the respondents might have included 'children' when answering question 11 pertaining to 'conflict and family', while question 12 (appendix 8) dealing with 'conflict and children' was intended for that purpose.

5.7.2 The researcher acknowledges that it might have been better if the redrafted questionnaire was also tested first because aspects such as 5.7.1 would have been eliminated.

5.7.3 The response rates to questions 34 and 35 of the questionnaire (appendix 8), which led to the discussions under point 4.3.3 and 4.3.4 were both 93.7 per cent (268/286). In retrospect, the researcher realises that these questions, which are both related to partner relationships, might have sounded similar. However, because of the differences among those in agreement (196/286 and 96/286 respectively), it appears that there was no confusion

over what the questions were asking.

The area of investigation:

5.7.4 Although this study has not investigated negative incidents on the night shift, in retrospect it is realised that the occurrence of these negative incidents on the night shift cannot be divorced from the aspect of alertness.

## **5.8 RECOMMENDATIONS**

The following are the recommendations made by the researcher, based on the findings of this study. These could be used by policy makers, hospital management and nursing management.

### **5.8.1 Adaptation to night shift**

It is recommended that there be an 'orientation and induction' programme with regard to preparing the prospective night shift person to the rigours of the night shift.

#### 5.8.1.1 Coping with regard to the physical aspects:

The inclusion of a programme to prepare the night nurse for what the physical adaptation to working night shift would entail, is proposed as a requirement. The aspects of sleep and sleep disturbances, circadian rhythm adaptation, alertness and fatigue are all part of a chain that is linked to the working of the night shift. It has to be seen as both

imperative and beneficial for night nurses to be assisted towards the prevention of, and coping with the negative occurrences. This in turn would help with the 'bearing' of the shift as described by Humm (1996). The programme should start prior to the commencement of night duty as 'Human Resource' assistance and a support function, and use could be made of both written communication and personal contact.

Circadian rhythm adaptation and sleep cannot be separated from shift lengths and cycles, and, in this regard, it is recommended that rapidly rotating night shifts (two to three nights in a row), be refrained from, as they impact negatively on the length of sleep. Heed should also be taken of the need to refrain from working seven nights in a row, as the literature suggests. Should an eight-hour shift be a consideration, it should only be implemented if the safety of the night-shift nurse is not compromised.

5.8.1.2. Combating/coping with the identified worst period of between 03h00 and 04h00:

The identified 'worst time' physically of 03h00 to 04h00 for night nurses in this study (inclusive of the decline in alertness) has to be reacted upon strategically. It is recommended that quality improvement awareness and strategies be applied to combat the 03h00 to 04h00 slump. The possibility of regular rest breaks could be one such consideration, which

has been shown to reduce the risks of accidents in similar situations. The possibility of changing the shift to a shorter one should not be excluded.

The access to a gym with an exercise programme for night nurses could also assist with maintaining alertness. This could be done during the meal break.

5.8.1.3 'Employee Assistance' with regard to the social demands of working night shift:

It is recommended, in the same way as described above, that prior orientation and ongoing induction with assistance and support be offered to night nurses to assist with coping with the social demands of night shift. It is also recommended that this aspect of assistance be viewed as imperative. Areas which could be focused on are:

- Coping with potential domestic difficulties.
- Coping with frustration and stress.
- Relationships with partners.
- Educational needs of children and the need for tolerance of domestic commitments in this regard.
- Importance of maintaining social contact and friendships.

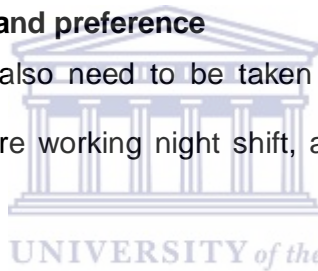
**5.8.2 Choice of shift**

It is recommended that people be given a choice when they want to work night duty as it is evident that choice should still play some role in the allocation of this shift. The choice of when to work night shift:

- Allows the individual nurse the positive option of pursuing her shift preference and lends itself to more committed workforce.
- Allows for timely planning.
- Allows a nurse the possibility of negotiating her shift.

**5.8.3 Gender, age and preference**

Aspects that also need to be taken into consideration with regard to nurses who are working night shift, as it relates to the findings of this study, is that:



- The overwhelming majority of the night nurses were females.
- Eighty were in the age group of 30–50 years. In this regard, an attempt should specifically be made to recruit younger nurses in the same way as indicated above, and assistance with orientation and ongoing support for these younger night nurses should be provided. The researcher feels this would both benefit the hospital and assist the night nurses with ‘bearing’ the night shift.
- As this study reveals, there is a small group of nurses who willingly accept and desire to do night shift. Further findings have shown that, within this group, there are a few who embarked on night duty for beneficence – an aspect that has to be recognised

and acknowledged by management from time to time, especially with the monetary incentive being described as 'laughable.'

**5.8.4 Coping methods**

Although this study did not investigate what the means and methods are to which night nurses resort in order to cope with the stress of night shift, it is recommended that further research be done specifically regarding this aspect, as the literature revealed that unhealthy methods are applied. This recommendation is made to tie in with point number 5.8.1.3 (second bullet), which could then be used in a proactive manner.

**5.8.5 Child-minder facilities**

It is evident from the results of this study that child-minder facilities are imperative. The provision of crèche or child-minder facilities would make night nurses feel that they are recognised and that their children are also cared about. A mother who knows that her children are cared for while she is at work could be a more fulfilled worker.

**5.8.6 Workload**

Although the issue of workload arose in many of the answers even though the questions did not refer to workload, it means that some discontent existed with workloads of nurses. 'Early mornings' and when the ward was on 'emergency intake' were the periods identified as those associated with the heavy workload. Areas identified by the night nurse where heavy workloads were experienced, were those where patients underwent surgical operations and 'TOPs. It is recommended that the

night-shift workload be assessed in an attempt to verify whether these claims are real, and then to set about to correct the situation.

**5.8.7 Ongoing research on night shift**

Because night shift is mandatory in this institution, the researcher recommends that further research be done in this field. It is suggested that night-shift nurses in general establish a working group which explores aspects of night-shift nursing both locally and elsewhere.



**5.9 CONCLUSION**

The purpose of this study was to find out what the experiences were of nurses who worked the night shift, in relation to the physical (bodily), social and work-related aspects that they described.

Some of these experiences were described in the responses to the self-administered questionnaire. The findings and subsequent discussion highlighted certain aspects which were used as recommendations for human resources policy, as well as indicators for further research.

This study determined that, despite all the risks that have been associated with night duty, there are still some nurses to whom this shift appeals.

‘There is something about the wee hours of the morning...’ (Cowin, 2003:40).



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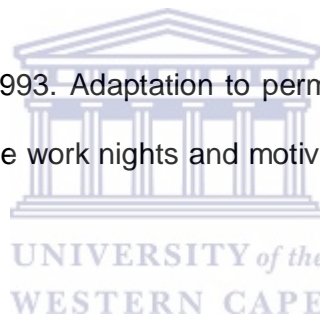
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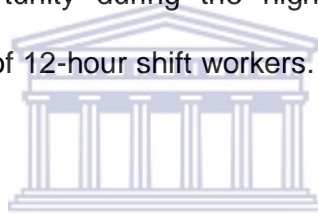
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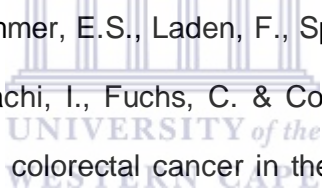
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**APPENDICES**

**Appendix 1: Letter to GSH requesting permission to conduct questionnaire**

**BERYLDENE L SWARTZ**

**100 DAVID ATKINS STREET**

**CHARLESVILLE**

**7490**

September 16, 2006 MISS CJ THORPE –DEPUTY DIRECTOR: NURSING

GROOTE SCHUUR HOSPITAL

Re: My research project – Night Shift Nursing



Dear Madam:

Herewith please find the proposed questionnaire that would be used in the study. It replaces the focus groups indicated in the draft proposal previously submitted.

The proposed dates for the completion of the questionnaires are the following:

Test and re-test: 17<sup>th</sup> and 25<sup>th</sup> June 2004 (sample will be  $\pm$  10-12 nurses)

Completion of the questionnaires: 22<sup>nd</sup> and 23<sup>rd</sup> July 2004 (study group will be all night nurses on both shifts willing to participate).

Sincerely,

.....

**Appendix 2: Letter from GSH granting permission to conduct questionnaire**

28/07/2004 07:23

4042370

GSHNURSING ADMIN

PAGE 01

**NURSING STAFF**

**GROOTE SCHUUR HOSPITAL**

**MRS BL SWARTZ has been granted permission to  
hand out questionnaires for her Research Project  
working towards her Masters.**

**Thank You**

  
**MISS CJ THORPE  
DEPUTY DIRECTOR: NURSING  
GROOTE SCHUUR HOSPITAL**

28.7.04

  
**UNIVERSITY of the  
WESTERN CAPE**

:

**Appendix 3: Request to Research Ethics Committee**

**FROM: BERYLDENE L SWARTZ  
100 DAVID ATKINS STREET  
CHARLESVILLE  
7490**

2004

To: RESEARCH AND ETHICS COMMITTEE, FACULTY OF HEALTH SCIENCES, OMB, GROOTE SCHUUR  
HOSPITAL

For Attention: Mr Xolile Fula

Re: 075/2004 -My research project on Night Shift Nursing

Dear Sir:

Herewith please find a revised (accepted by UWC) proposal re above. A questionnaire replaces the focus groups indicated in the draft proposal previously submitted.

The proposed dates for the completion of the questionnaires are the following:

Test and re-test: 17<sup>th</sup> and 25<sup>th</sup> June 2004 (sample will be  $\pm$  10-12 nurses)

Completion of the questionnaires: 22<sup>nd</sup> and 23<sup>rd</sup> July 2004 (study group will be all night nurses on both shifts willing to participate).

Sincerely,

.....

Appendix 4: Approval from Research Ethics Committee

**UNIVERSITY OF CAPE TOWN**



Research Ethics Committee  
E53 Room 44.1, Old Main Building Groote  
Schoor Hospital, Observatory, 7925  
Queries : Xolile Fula  
Tel : (021) 406-6492 Fax: 406-6411  
E-mail : Xfula@curie.uct.ac.za

16 November 2004

**REC REF: 075/2004**

Ms. B. Swartz  
100 David Akins Street  
Charlesville  
7490

Dear Ms. Swartz

**THE CHALLENGES OF NIGHT- DUTY NURSING- A DAYLIGHT VIEW**

Thank you for your letter to the Research Ethics Committee dated 15 June 2004.

The revised proposal is acknowledged and approved.

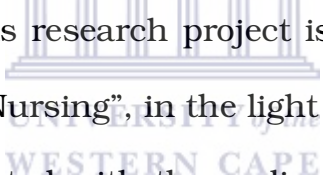
**Please quote the REC. REF in all your correspondence**

Yours sincerely

  
**PROF. T. ZABOW**  
**CHAIRPERSON**

**E. DESCRIPTION OF PROJECT AND RESEARCH ETHICS STATEMENT**

Please type below, or attach a typed document, usually between 500 and 5000 words, setting out the purpose and process of the research. Please include a clear research ethics statement. The onus is on the applicant to persuade UWC that the research will be conducted ethically. This will normally require evidence of an up to date research ethics literature search in the particular discipline; evidence of what the world standard ethical practice is, in the particular discipline; an explanation of how the proposed research is to be conducted ethically; a detailed justification of any proposed departure from world standard ethical practice; and a clear undertaking to conduct the research ethically. It may be useful also to agree to conduct the research in line with the published ethical rules of a national or international disciplinary association. UWC reserves the right to stop or suspend any research undertaken by its staff or students, or by outsiders on its property or in association with it, if the research appears to be unethical.

**DESCRIPTION OF PROJECT AND RESEARCH ETHICS STATEMENT:**

The purpose of the this research project is to do an descriptive study with regard to “Night Shift Nursing”, in the light of nursing being such an age-old profession, having started with the earliest people, when women protected and took care of the children, the sick and the elderly in their homes and in the homes of their neighbours day and night. The researcher being a night nurse herself feels that this area is worthy of studying as night shift nurses today still have to compete the their day shift counter parts.

With the study it is proposed that the “Experiences of Night Shift Nursing” in a large academic hospital in the Western Cape be described. The process that would be embarked on would be conducting questionnaires with the study population of night nurses on both shifts over two consecutive nights whilst the sample population is those who will voluntarily participate after

being informed fully. Close-ended questions will be used and quantitative analyses will be used.

Groote Schuur Hospital will be the selected site for the empirical part of the study.

### **ETHICAL CONSIDERATIONS**

Permission to carry out the research will be obtained from Groote Schuur Hospitals' Management and from the Head of the Nursing Division. Application will also be made to Groote Schuur Hospital/ University of Cape Town's Research Ethics Committee as well as to the Ethics Committee of the University of the Western Cape. The night nurses will be duly informed of the ethical aspects of the study –an internal notice will inform them and they would also be shown the written permission obtained by the researcher to conduct the study. The nature of the study will be verbally explained to them. In addition they would be told that no written consent is required from them as their voluntary participation in the study would be regarded as permission. They will also be informed that they have the right to withdraw at any time during the study process and that should they do so, it would in no way be held against them. They will be assured of their confidentiality and anonymity. Information on the study will be available to all stakeholders who gave permission for the study viz. the Ethics Committee's of both UCT and UWC, and the Management and Division of



Nursing of Groote Schuur Hospital. The participants would be informed that the results would be available in about one year's time and that they may approach the researcher should they want access to the results.



Form issued by: Professor Renfrew Christie, UWC Dean of Research, February 2002.  
(959 2949; 959 2948 secretary, 959 3170 fax, email: rchristie@uwc.ac.za)

**Appendix 6: Draft Questionnaire presented to  
8 participants in pre-test**

Appendices

Proposed dates:  
Thurs. night 24-25 June 2004 &  
Fri. night 25-26 June 2004

**A questionnaire being conducted with night  
nurses at Groote Schuur Hospital, Cape Town,  
South Africa.**

## RESEARCH STUDY

Dear fellow night-nurse,

Your voluntary, anonymous and private participation is requested in filling out this questionnaire. I am currently registered as a part-time student following the MCur at the University of the Western Cape. The aim of the study is *To describe the experiences of nurses doing night shift in a large academic hospital in the Western Cape, South Africa.*

Your participation will assist in this research project in that your responses once analysed could collectively assist in giving new insight on 'Night Shift Nursing' and/or could help renew certain emphasis with regard to the 'Night Shift Nursing Experience'. Your candid and honest feedback as a night nurse in the service is extremely important this study. You are asked to place the completed (or non-completed) questionnaires back into the sealed envelope provided, and into the box provided by the researcher, which will be churned and only be opened after a week, to ensure that there can be no way of tracing any of the questionnaires to respondents hence confidentiality of the responses is safeguarded.

Please note that your non-participation will in no way be held against you. Data obtained from the responses will be analysed anonymously. The results of this study will be made known to the Nursing Division in roughly one year's time. You may also request results from the researcher after the recommended period. It should take no longer than 10 minutes to complete a questionnaire.

Your participation is valued. Thank you for completing this questionnaire.  
Beryldene L Swartz, Student No: 8722516

### Participant Information

Gender	Male	Female			
Age Group	20-29	30-39	40-49	50+	
Length of period on night duty in months	1-6	7-12	13-18	19-24	24+
Marital status	Married	Single	Divorced	Widowed	
No of dependants	Children		Other		
Category of nurse	RN	EN	ENA		
Clinical area in which you are working	T&E	MED	SUR	MAT.C	ICU

**Appendix 6: Draft Questionnaire presented to 8 participants in pre-test**

Appendices

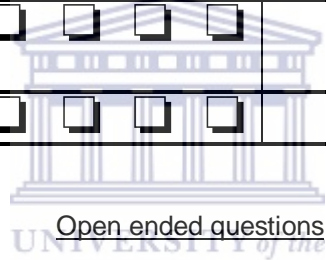
*Please put a mark (X) in the appropriate block*

Ratings→	Strongly Disagree	Disagree	Agree	Strongly Agree	Comment if Strongly Agree or Strongly Disagree or list other
<b>GENERAL</b>					
1. Nurses doing night shift in this day & age still have a hard time being recognized.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Why are you doing night shift?	Allo cate d	Fina ncia l	Car eer	Con veni enc e	
<b>PHYSICAL EFFECTS RELATED TO NIGHT SHIFT NURSING</b>					
5. Night shift works, for me i.e. with the body's internal clock (Circadian rhythm)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. When my sleep cycle has been disrupted, I have more health problems than day nurses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Night shift nurses have more sleep problems compared to day nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. I am able to sleep for...hours during the day.	3	4	5	6	
9. I require advice from my employer on how to assist with quality sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. I have sick for...nights in the last six months	<5	<7	<10	>10	
11. When I am fatigued on night, I guess more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. When I am tired and fatigued I need more time to think before making a decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Night shift has been hazardous to my weight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>SOCIAL EFFECTES RELATING TO NIGHT SHIFT NURSING</b>					
14. A conflict exists between me working night shift and my family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
There has been a change in my relationship with me children being on the night shift.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. With me working night shift, my children's school development is normal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16. With me working night shift, I am able to attend to the health needs of my children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>WORK RELATED EFFECTS PERTAINING TO NIGHT SHIFT NURSING</b>					
17. Why are you doing night shift?	Allo cate d	Fina ncia l	Car eer	Con veni enc e	
18. Night shift nurses have more patients to care for compared to day nurses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19. Night shift nursing has fewer professional to structure responsibility & to rely upon in a decision-making situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20. Feelings of stress and isolation are increased amongst night nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21. A widespread perception exists of night shift work having a lower value.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22. Team work happens naturally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23. Night shift nurses seldom ponder on the corporate mission	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24. Night shift nurses do care about the quality of work delivered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Appendix 6: Draft Questionnaire presented to 8 participants in pre-test**

Appendices

25. Night shift requires endurance and toughness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
26. Night nurses have adequate supervision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
27. Night matrons are accommodating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
28. Which period of the night do you feel at your worst physically	0-1	1-2	2-3	3-4	
29. A night shift should be ... hours long.	8	10	11	12	
30. You have sufficient social support doing night shift.	8	10	11	12	
<b>WORK ENVIRONMENT</b>					
32. There are more needle stick injuries at night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
33. There are more medico-legal nursing incidents at night.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
34. Security risks are less to nurses on night shift	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IMPACT RELATED TO PARTNERS</b>					
35. Night shift for more that 6 months can affect relationships with partners negatively	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
26. Night shift on the whole can lead to divorce.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
36. Night shift can lead to harmful sexual relationships.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Open ended questions

1. Briefly describe what you experience of night duty has been.

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2. What in your opinion, for night duty nursing needs to change, remain the same or improve?

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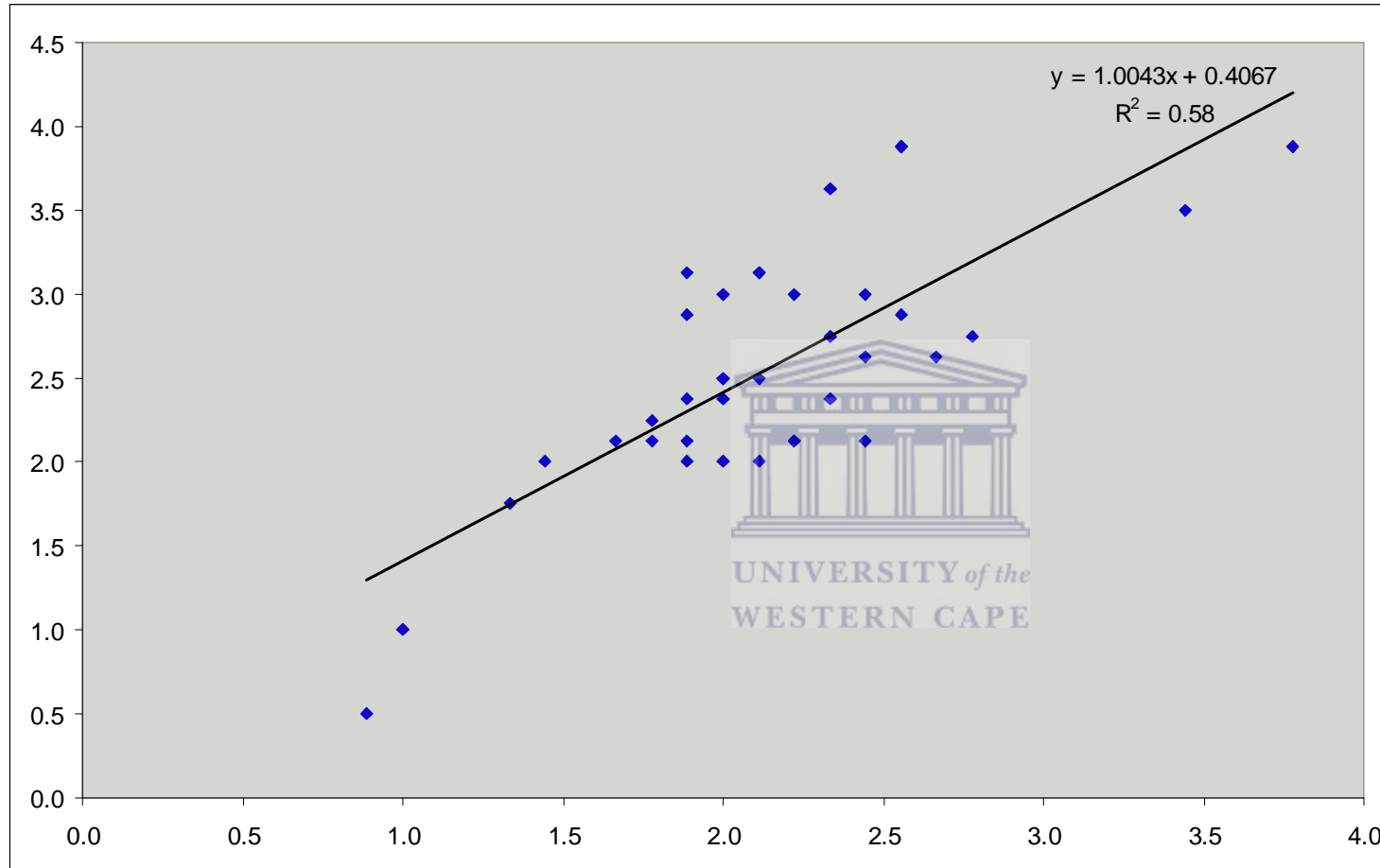


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Scatter diagram to indicate relation between test and re-test questionnaires



Correlation Coefficient	0.76	Significantly strong positive relationship
R-squared	58%	
Beta	0.58	
SE	0.08	
T-stat	6.95	
P-value	0.00%	

Test & retest: 19 & 24 June 2004  
 Completion of questionnaires  
 Thurs. & Fri. night 29 & 30 July 2004

A questionnaire being conducted with night nurses at Groote Schuur Hospital, Cape Town, South Africa.

## RESEARCH STUDY

### Participant Information

Dear fellow night-nurse,  
 I am currently registered as a part-time student following the MCur at the University of the Western Cape, and for this reason I am doing this study. The aim of this study is *To describe the experiences of nurses doing night shift in a large academic hospital in the Western Cape, South Africa.*

Your **voluntary, anonymous and private participation** is requested in filling out this questionnaire.

Your participation will assist in this research project in that your responses once analysed could collectively assist in giving new insight into '**Night Shift Nursing**' and/or could help renew certain emphasis with regard to the '**Night Shift Nursing Experience**'. Your candid and honest feedback as a night nurse is extremely important this study. You are asked to place the completed (or non-completed) questionnaires back into the envelope provided, seal it and place it into the box provided by the researcher, which will be churned and only be opened after a week, to ensure that there is no way of tracing any of the questionnaires back to the respondents. Hence your confidentiality and anonymity will be safeguarded.

Please note that your non-participation will in no way be held against you. Data obtained from the responses will be analysed anonymously. The results of this study will be made known to the Nursing Division in roughly one year's time. You may also request results from the researcher after the recommended period. This questionnaire would take between about minutes to complete. Call me at tel. no. 6234 or bleep 1134 if you have any queries – your query will also be confidential

Your participation is valued. Thank you for completing this questionnaire.  
 Berydene L Swartz, Student No: 8722516

Gender	Male	Female				
Age Group	<20yrs	20-29yrs	30-39yrs	40-49yrs	50+yrs	
Length of period on night duty in months	1-6mnths	7-12mnths	13-18mnths	19-24mnths	24+mnths	
Marital status	Married	Single	Divorced	Widowed		
No of dependants	Children		Other			
Category of nurse	RN	EN	ENA			
Clinical area in which you are working	T&E	MED	SUR	MAT.C	ICU	OT

#### Instructions to the participant:

1. A rating scale is being used for most questions. Please indicate with an X your preferred response in one of the blocks
2. There is space for comments next to each question if you feel strongly
3. Please answer questions as honestly and independently as possible
4. < Means less than
5. > Means more than

**Appendix 8: Modified Questionnaire as presented to participants**

Appendices

Ratings→	Strongly Agree	Agree	Disagree	Strongly Disagree	Comment if Strongly Agree or Strongly Disagree or list other	
<b>GENERAL</b>					Add comments if you so wish	
1. Reason why are you doing night shift?	Allocated <input type="checkbox"/>	Financial <input type="checkbox"/>	Convenience <input type="checkbox"/>	Studies <input type="checkbox"/>		
2. Which shift do you prefer?	Day <input type="checkbox"/>	Night <input type="checkbox"/>				
<b>PHYSICAL (bodily) EFFECTS RELATED TO NIGHT SHIFT NURSING</b>						
3. My body's circadian rhythm (i.e. internal clock) cannot adapt to night shift	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4. I have more health problems when working night shift compared to when I work day shift	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5. I have more problems with sleeping when working night shift compared to when I work day shift	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6. I am able to sleep for...hours during the day.	<4 hrs	4-5 hrs	5-6 hrs	6+ hrs		
7. I have been sick for...nights in the last 6 months (only while on night duty)	0	1- 3	4 -5	6 -7	8+	
8. When I am tired and fatigued I need more time to think before making a decision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
9. Answer 1 of the following two questions:						
9.1 On night shift I have lost weight	0kg	<2kg	2-3kg	4-5kg	>6kg	
9.2 On night shift I have gained weight	0kg	<2kg	2-3k g	4-5kg	>6kg	
10. Which time of the night do you feel at your worst physically	Before 01h00	01h00-02h00	02h00-03h00	03h00-04h00	04h00-07h00	
<b>SOCIAL EFFECTES RELATING TO NIGHT SHIFT NURSING</b>						
11. Night shift increases conflict between me and my family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
12. My being on night shift has brought about a negative change in the relationship with my children (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> not applicable	
13. I am unable to maintain social relationships (e.g. friends, church, sport) whilst on night duty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
14. I am not able to attend to the educational needs of my children (if applicable) when I am on night duty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> not applicable	
15. While working night shift, I am unable to attend to the health needs of my children. (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> not applicable	
16. While working night shift I have insufficient social support (e.g. help with cooking, house-work, conveying children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
17. Are child minder & crèche facilities a necessity for night nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<b>WORK RELATED EFFECTS PERTAINING TO NIGHT SHIFT NURSING</b>						
18. When I am tired and fatigued whilst on night shift, I am not as tolerant to patient care needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
19. The night shift nurse-patient ratio is lesser than that on day shift	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

**Appendix 8: Modified Questionnaire as presented to participants**

Appendices

20. Night shift nursing have fewer professionals (Dr's., Physio's., Senior nursing personnel etc) to rely upon in a decision-making situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21. Night duty nursing causes increased feelings of:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• stress	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• isolation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22. A general perception exist that night shift nursing work has a lesser value than day shift nursing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23. A perception exist that night shift has a lesser work load.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24. Team work happens more easily on night duty than on day duty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25. Senior nurses are to be allocated to night duty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
26. Night nurses have the same knowledge and understanding about the mission of the hospital compared to day nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
27. Night shift nursing requires more endurance and toughness than day nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
28. Night nurses have adequate supervision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
29. Night matrons are accommodating to the needs of night nurses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
30. A night shift should be ... hours long.	8hrs	10hrs	11hrs	12hrs	
31. If above is an option for you, would you be negatively affected with regard to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• transport arrangements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
32. Night nurses care about the quality of work delivered the same way as day nurses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
33. There are enough opportunities for me on night shift to further my career	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IMPACT RELATED TO PARTNERS</b>					
34. Night shift for more that 6 months can affect relationships with partners negatively	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
35. My being on night shift has brought about a negative change in the relationship with my partner (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> not applicable
36. Night shift can lead to the breakdown of marriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
37. Night shift can lead to problematic sexual relationships with partner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	