

**WORK RELATED STRESSORS THAT AFFECT DIAGNOSTIC
AND ULTRASOUND RADIOGRAPHERS IN A PUBLIC
HOSPITAL IN THE GAUTENG PROVINCE**

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Degree in Health Sciences in Radiography at the Durban University of Technology

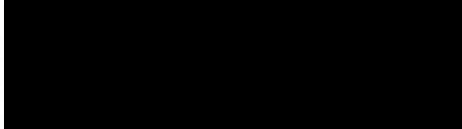
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Date : May 2017

Declaration

This is to certify that the work is entirely my own and not of any other person, unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Durban University of Technology or to any other institution for assessment or for any other purpose.



17 August 2017

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Dedication

I dedicate this dissertation to my loving husband who has been through resentment and abandonment from a wife abstracted by studies, my three wonderful children, and my family. I also dedicate my project to my supervisors Professor M.N. Sibiya and Dr P.B. Nkosi with thanks for their guidance.

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I wish to thank God for a healthy body and mind throughout the research.

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Abstract

Introduction

Work related stressors are identified as the main reason for the decline in patient care in Radiography in public hospitals. Radiographers opt to leave the public sector because of stressful experiences. Research has shown that the scarcity of qualitative studies on the phenomenon makes it difficult to understand work related stress in relation to radiography as a profession.

Aim of the study

The aim of the study was to explore and describe work related stressors in Radiography at a public hospital in Gauteng, South Africa.

Methodology

This study was a qualitative, exploratory, descriptive study. An interview guide was used to elicit information from 10 participants through semi-structured interviews. All the interviews were one-on-one and were audio-recorded. The data were analysed through Tesch's eight steps of thematic analysis.

Findings

The following three themes emerged during data analysis, namely: personal well-being of Radiographers; decline in quality patient care and impaired radiography service; and, environmental enablers. The findings of the study revealed that the participants' general health was compromised by various factors pertaining to work related stress.

Conclusion

Interventions necessary for dealing with work related stressors are highlighted as a way of enabling improvement of the working environment conditions. The participants in the study felt that hiring more staff could alleviate their work related stressors. The study has shown that it is also imperative that staff and management are constantly communicating well.

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List of Acronyms

Acronym	Full term
CEO	Chief Executive Officer
HPCSA	Health Professionals Council of South Africa
HSE	Health and Safety Executive
NHRD	National Health Research Database
SMI	Stress Management Intervention
SoR	Society of Radiographers
UK	United Kingdom
USA	United States of America

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION AND BACKGROUND TO THE STUDY

A report by Health and Safety Executive (Health and Safety Executive [HSE] 2001: 2) defines stress as the reaction that people have to excessive pressure or other types of demand placed on them. According to Naqvi *et al.* (2013: 525), stress can also be defined as a condition of physical and mental disorder which occurs in a situation of pressure, when resources are unable to fulfil the demand of an individual. According to Dewe, O'Driscoll and Cooper (2012: 24), definitions of stress are products of their time.

The word stress is used so often now that it is difficult to believe that it originated as recently as 60 years ago when Hans Selye created it (Rosch 1998: 1). Lu (1999: 1) highlighted work related stress as being a health issue that might be detrimental not only to individuals but also to organisations as a whole. For this reason, the need to tackle work related stress is also acknowledged in law. For example, in the United Kingdom (UK) the Health and Safety etc. Act 1974 (United Kingdom 2016) states that, among other provisions, the health and safety of workers are protected in connection to the actions at work. Similarly, in South Africa, the Occupational Health and Safety Act 85 of 1993 (Republic of South Africa 2004) clearly states that a risk assessment for health hazards and stress at work must be a prerequisite for all workers, and set up an advisory council to take necessary action to control any risk.

Work related stress affects the quality of service offered by radiographers to their patients. Work related stressors in radiography are partly aggravated by an obvious shortage of qualified personnel which results in an abnormal patient to radiographer ratio. The phenomenon of stress at work affects lives

therefore influencing the staff's sense of wellbeing and social identity (Makanjee 2004: 24). Accordingly, guidance regarding work related stress in health workers is required. Furthermore (Cox, Griffiths and Cox 1996: 4) indicate that the experience of work related stressors can be linked to job dissatisfaction and ill-health.

Chang and Oswari (2008: 159) propose that what one individual considers as stress may be regarded by another as merely a challenge; therefore stress is subjective according to the individuals concerned. Birkford (2005: 18) suggests that personality differences may determine how work conditions, together with resource availability, may influence workplace stress experienced by individuals. Therefore, a focus on and systematic organisation of individual stress encounters, as well as reactions to stress, is essential for future research on the subject.

Most radiographers are aware of the challenge of work related stress but have never been afforded the platform to express their views on the subject. Therefore, this study may assist towards developing ways in which personnel can be educated to become aware of the causes of stress as a result of demands by the work environment (Tsai and Liu 2012: 7). For these reasons this study is essential in helping radiographers find their voice in the health professional community. Levi and Levi (2000: 12) compiled the European Commission's guidance on work related stress which indicates that work-life conditions have a strong influence on health and may also affect the performance of the organisation.

This research will encourage radiographers to share experiences on the subject and in future focus on ways to prevent and control the prevalence of work related stressors on Radiographers. Work related stress is evidently a cause for concern in radiography. The volume of research on radiography and work stress as a subject is disappointingly small, especially in South Africa. This study will help describe as well as explore work related stressors by means of information gathered from individuals who have experienced the phenomenon.

1.2 PROBLEM STATEMENT

Work related stress negatively impacts on the quality of service rendered by radiographers to their patients. According to Raj (2006:114), organisations are also affected by stressed out employees. Additionally, occupational stress is costly to employers and employees (Reingold 2015: 150). Given both the health and economic costs of occupational stress, the development of occupational stress interventions is imperative (Volmink 2014: 3). Gam (2015: 1-2) highlighted the fact that understanding stressors and how to manage them will make it easier for radiographers to find solutions to stressful situations. Ugwu, Ahamefule and Nwobi (2008: 28) proposed that in order to find the link between radiographer's experiences, causes of stress, interventions, and conceptual framework of the experiences of radiographers needs to be developed. Work related stressors in radiography are partly aggravated by an obvious shortage of qualified personnel which results in an abnormal patient to radiographer ratio. Any strategies to alleviate the problems identified tend to be vague and difficult to implement in practice (Lawrence, Poggenpoel and Myburgh 2011: 1). Therefore, this study will help describe work related stressors by means of a qualitative descriptive design approach. This design will encourage the participants to open up about their views on the subject.

1.3 AIM OF STUDY

The aim of the study was to explore and describe work related stressors that affect Radiographers in a public hospital in Gauteng, South Africa.

1.4 MAIN RESEARCH QUESTION

- What are work related stressors that affect radiographers in a public hospital in Gauteng, South Africa.?

1.5 SUB-QUESTIONS

- What are the experiences of the radiographers who are affected by stress in their work environment?
- What are the perceptions of the radiographers who are affected by stress with regard to their environment?

1.6 SIGNIFICANCE OF THE STUDY

The value of keeping healthy in order to improve job performance is emphasised (Adesi, Kwadwo and Kab 2015: 3). Makanjee (2004: 21) advises researchers to look at what demotivates radiographers at work, such as change in the atmosphere at the work place. Relevant information is scarce in South Africa compared to internationally where there is plenty research conducted on the subject (Volmink 2014: IV). A recent quantitative study on occupational stressors on radiographers working in eThekweni District of KwaZulu-Natal, conducted by Gam (2015: 83), suggested the inclusion of a qualitative component in future studies would afford radiographers a platform to express themselves more freely. The current study will be a base for future researches to gain deeper insight into the problem, and will serve as a source for data for future research in this area (Rajan 2014: 73).

Often radiographers start seeking help only when they begin experiencing problems with their personal health. Research is necessary in this field to help alleviate the incidence of illnesses associated with work related stressors through highlighting the challenges Radiographers face within their work space. Rich information obtained from this research can be used as a guide in creating preventative measures. Moreover, this will be the first study to address work related stress in this particular provincial hospital. This will benefit personnel and the managers of the hospital because once the relevant information is gathered; necessary interventional measures can be initiated, resulting in positive improvement.

1.7 DEFINITIONS OF TERMS

The terms and concepts that will be used throughout the study are discussed below.

1.7.1 Burnout

Burnout is a response to chronic stress that has received a great deal of research attention because of its relevance in today's workplace (Bickford 2005: 2). Maslach, Jackson and Leiter (1996: 192) highlight that burnout in human services work can be defined as a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment that can occur among individuals who work with people in some capacity.

1.7.2 Experiences

Experience is something personally encountered, undergone or lived through.

1.7.3 Perceptions

Perception is regarded as how people view experience.

1.7.4 Radiographer

A radiographer is a health professional who performs medical imaging by producing (x-ray) images or sound waves to assist medical specialists as well as doctors with diagnosis and treatment of injury and disease (Rajan 2014: 72).

1.7.5 Stress

Stress is what we feel when we have to respond to a demand on our energy. Thus, stress is a normal, adaptive response to stressors in our environment (Bickford 2005: 2).

1.7.6 Stressor

Selye (1950) defined a stressor as a stimulus that provokes a stress response, subsequently explaining that a stressor may either be mental or psychological in nature.

1.7.7 Work related stress

According to the HSE work related stress is defined as the harmful reaction people have to undue pressures and demands on them at work (Organisation for Health and Safety 2014: 3). However, for the purpose of this study, work related stress will be defined as the body's physiological reaction to circumstances that require behavioural adjustment (Mutsuhiro 2010: 1).

1.8 STRUCTURE OF THE DISSERTATION

Organisation of the dissertation is in form of Chapters 1-6. The reference list is at the end of all the chapters and appendices are at the end of the dissertation.

CHAPTER 1: ORIENTATION TO THE STUDY

This chapter explains the relevant purpose of the current study. An outline of the statement of the problem, purpose of the study, significance of the study, and the research questions is also shown in this section.

CHAPTER 2: LITERATURE REVIEW

This chapter outlines the relation between the current study and existing literatures used in the study. Secondly, the theoretical foundation will guide the choice of methodology to be employed in the current study, to assist with in interpretation of data.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

This chapter presents the methodology that guides the study to answer the research questions. A detailed outline of the research paradigm, design, study

setting, sampling process, ethical consideration, pre-testing of the data collection tool, data collection, data analysis and trustworthiness of the study is illustrated.

CHAPTER 4: PRESENTATION OF FINDINGS

This chapter presents the findings of the study. The findings are presented in form of different statements collected from individual participants' interviews.

CHAPTER 5: DISCUSSION OF FINDINGS

This chapter is to attach meaning to data obtained from the current study in relation to previous literature. Furthermore discusses the findings of the study in relation to the aim of the study as illustrated in chapter 1.

CHAPTER 6: CONCLUSION, LIMITATIONS AND RECOMMENDATIONS OF THE STUDY

This chapter summarises the study and presents recommendations based on the findings. It also provides an unbiased interpretation of the research study as well as illustrates the limitations of the study.

1.9 SUMMARY OF THE CHAPTER

Chapter 1 has introduced the subject of interest clearly while providing background to the research study, problem statement, aims, research questions that will be used to gather information about the phenomena. Further, it has presented the significance of the study, defining and clarifying terms and concepts as well as the flow of the dissertation broken down into chapters and briefly explained. The next chapter is the literature review which will help with evaluation of relevant studies to provide a basis of theory to support this study.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The aim of this literature review is to systematically search and review literature about work related stress in radiography. The availability of relevant literature is very limited. Both qualitative and quantitative studies were collected. A recognised research background is considered an essential component of this (Ng and White 2005: 1).

Multiple sources such as Google scholar, Medline, Science Direct, and radiology technology websites were consulted in order to obtain enough information about the field of study and the gap in knowledge. The key words used for search were: work related stress, radiographer, Ultrasonographer, stress management, effects of stress, public health.

2.2 DEFINING AND EXPLAINING STRESS

This section provides an overview of the variety of ways in which stress may be defined and explained. The literature reviewed reveals that early on stress was defined in terms of stimulus, response, or the interaction between the two (Dewe, O'Driscoll and Cooper 2012: 24). A report by the HSE (2001) defines stress as the reaction people have to excessive pressure or other types of demand placed on them. According to Naqvi *et al.* (2013: 525) stress can also be defined as a condition of physical and mental disorder which occurs in a situation of pressure, when individual resources are unable to fulfil the demands placed on that individual. Definitions of stress are products of their time (Dewe, O'Driscoll and Cooper 2012: 24). Because the exact meaning of occupational stress has not been finalised, the term occupational stress has been commonly used interchangeably with job stress and work (related) stress by previous researchers (Lua and Imilia 2011: 2).

According to Reingold (2015: 150), stress is an inevitable psychological force that disturbs the body's ability to maintain balance. The author further argues that occupational stress has financial implications, such as stress related illnesses, for the organisation. Raj (2006: 119) highlighted that occupational stress among radiographers is not rare, and usually puts a lot of responsibility on the radiographers. Stress levels of the radiographers can be compared with medical and other paramedical employees (Rajan 2014: 83). Lua and Imilia (2011: 13) concluded that within the hospital support staff, radiographers were most stressed. Both these studies concur with the findings of the study by Raj (2006: 114) which alludes to the fact that health care employees are inevitably subjected to a lot of work related stress. All three authors agree that radiographers are indeed affected by work stress.

A study conducted by Saha, Sinha and Bhavsar (2011) at a super speciality hospital was aimed at evaluating job stress in hospital staff (including radiographers). A number of sources such as the change in finance and structure of the system were assessed in order to suggest ways of decreasing job stress. The study proved that work stress may result from abnormal workload, low salaries, staff shortages, and being attached emotionally to patients. The study suggested a number of interventions which included workload management, job redesign, and occupational health education (Saha, Sinha and Bhavsar 2011: 1).

Botha (2012: 1) reports that according to the United Nations International Labour Organisation, occupational stress is a "global epidemic". Van Der Colff and Rothman (2009: 1) argue that a stable and productive health service is vital in any country. Volmink (2014: 3) found in a cross-sectional descriptive analytical study on stress that there is a substantial economic cost related to work related stress, as a result of absenteeism and healthcare provision. Botha (2012:1) states that as much as R3 billion a year is lost to work place stress in South Africa. Workers' health is being adversely affected because developing countries have limited resources and are thus constantly dependent on financial assistance from developed countries (Kortum, Leka and Cox 2010: 225).

A person may be satisfied with one or more aspects of his/her job but at the same time may be unhappy with other aspects related to the job. There are many aspects of a job such as inadequate salary, increased work volume, staff shortages, taking patient stress personally, limited work space, limited rest, and adhering to new rules and regulations, all of which can be regarded as prime sources of stress (Saha, Sinha and Bhavsar 2011: 1). How people appraise the stress reactions depends on their background and may involve factors such as age, race, where the person stays (location, community), number of children, family arrangements and culture (Blaug, Kenyon and Lekhi 2007: 16).

It is important to note that, literature in health sciences demonstrates that the majority of occupational stress and burnout research had focused on physicians and nurses (Probst (2012: 10). A cross-sectional survey employing a "Nursing stress inventory" of 39 statements, was done on registered nurses in South Africa, in order to assess 'occupational stress; sense of coherence; coping; burnout and work engagement'. The study was limited by not being able to prove cause and effect, did, however, point out that of all the stressors shortage of staff was considered to be the highest of all stressors, followed low salaries, and performing general clerical duties respectively (Van Der Colff and Rothman 2009: 7).

A study using both qualitative and quantitative methods was conducted in the United States of America (USA) by Pennington (2013), with the aim of examining the relationship between stress levels and wellness practices in radiography managers. The survey found that accreditation generated high levels of stress. However this study did not provide any new information because the questionnaire used could not gather information different to that gathered by previous studies. The findings in this study were however consistent with previous and present nursing studies conducted in Japan (Higashiguchi *et al.* 1999; Imai *et al.* 2004) and South Africa (Steenkamp 2014).

Ugwu *et al.* (2009) conducted a study aimed to determine the impact of the transition from medical Diagnostic Radiographers into Diagnostic Ultrasonographers in Nigeria. The study ascertained that radiographers affected by stress, gain satisfaction at work by adapting their role extension into sonography. Radiographers like other health care professionals, are hesitant to reach out for emotional support because they see themselves as providers rather than receivers of healthcare (Raj 2006: 118). Accordingly, medical professionals must be aware of the dangers of job stress on their health (Lua and Imilia 2011: 12). Analysing work stress reveals that keeping an eye on overall health of medical professionals may improve service rendered to patients (Lua and Imilia 2011: 12).

This literature review also notes certain limitations in research that has been undertaken thus far. The questions in the studies were mostly limited by the design of the studies undertaken. Therefore, causes and effects could not be shown because of the information gathered (Michie and Williams 2003: 5; Alavi *et al.* 2016: 6; Richardson and Rothstein 2008: 89-90). Hence the necessity for introduction of qualitative research traditions into radiography studies (Ng and White 2005: 1), because qualitative analysis will enable gathering of high quality data, as forcing data into limited categories is not necessary (Atieno 2009: 16).

Kortum, Leka and Cox (2010: 226) noted that in developing countries a gap existed in research undertaken thus far, especially research that explored work related stress and its ultimate causes. In South Africa, Rothman (2003: 5) highlighted the need for research to be conducted on burnout. Ugwu *et al.* (2007: 126) point out, such studies may serve as a baseline if they are conducted on a regular basis.

2.3 STRESS IN RADIOGRAPHY

Radiography is subdivided into different categories such as diagnostic radiography, radiation therapy, nuclear medicine and ultrasonography. This study concentrated on Radiographers. Radiographers work within the

radiology department and provide services within the hospital including emergency, outpatients, operating theatre and wards (Rajan 2014: 72). Considering all the services that radiographers provide, their salaries do not reflect their hard work (Rajan 2014: 72). In South Africa, according to the Department of Public Service and Administration of South Africa Circular 3 of 2016 (Appendix I), diagnostic professionals are paid according to Grades 1, 2 and 3 of the Occupation Specific Dispensation (OSD) in relation to the years of experience in a particular category.

Raj (2006: 119) highlights that even though radiographers experience stress differently in different countries, most studies provide consistent data suggesting that radiographer's general health and productivity is affected in their work environment and may result in stressed individuals. Additionally, Reingold (2015) and Raj (2006) confirm that stress causing issues have not changed. Both studies showed that radiologic technologists reported the following stressors: inconsistent management, poor communication, conflicting demands, inconsistent time management, long working hours, lack of breaks, and time pressures.

Stress escalates in relation to time pressure inability to keep up with work practices, varying social attitudes and technological advances (Fallon 2013: 6). Management expects professionalism while workers may require appreciation for a job well done (Romano 2012: 59). Naqvi *et al.* (2013: 529) warn that failure by management equals failure of the organisation. Stress can discourage radiographers as a result of adverse effects such as the brain drain imposed on the profession (Ugwu, Ahamefule and Nwobi 2008: 250).

2.4 FACTORS OF WORK RELATED STRESS

Researchers have long assumed that stress has been found to have many different sources (Yeboa *et al.* 2014: 141; Birkford 2005: 6-7). For instance, Saha, Sinha and Bavsar (2011: 4) emphasise that the elements of the workplace itself can be a cause of stress. According to Ganster and Schaubroeck (1991: 245) linked characteristics of the environment with

personnel's general health to establish if deterioration is due to work or personal issues. Verhovsek, Byington and Deshkulkarni (2009: 9) discovered that occupational stress may also result from poor communication among personnel which might in turn promote job dissatisfaction. According to Kawano (2008: 82), irritability at work is another important aspect which is associated with workplace environment, job fitness, and supervisor support.

An empirical study conducted by Yeboa *et al.* (2014: 146) described six areas of work design, namely:

1. Demand factors which may include workload, work pattern and work environment.
2. Control factors which relate to how much say a person has in the way they do their work.
3. Support factors which include encouragement, sponsorship, and resources provided by organisations, line management, and colleagues.
4. Relationship factors which help in promoting a positive working environment to avoid conflict and to deal with unacceptable behaviour.
5. Role factors which may help determine whether people understand their role in the organisation and help them to ensure that they do not have conflicting roles.
6. Change factors which will illustrate how organisational change, regardless of the size, may be managed and communicated within the organisation.

Similarly, Safety and Health Services (2015: 3) listed similar factors as developed by the HSE in a bid to assist employers in managing work related stress. All these factors could give rise to ill-health and poor negative well-being, which may then promote disinterest in work activities and absenteeism due to illnesses, if ignored. Blaug, Kenyon and Lekhi (2007: 31-33) listed factors related to work related stress as: workload cuts in staff, change, long hours, bullying, shift work, and sexual or racial harassment.

In South Africa, a study by Gam (2015: 57) pointed out that the limited number of staff on duty always tries to work quicker in order to compensate for the increased number of patients. This is consistent with the findings of the study conducted by Ugwu *et al.* (2007: 123) which investigated the incidence of occupational stress among radiographers in south-eastern Nigeria due to an abnormal patient-to-staff ratio. A study by Romano (2012: 58) revealed that absenteeism negatively affects those that are present at work as the work schedules need to be changed to compensate for the unexpected staff shortages which may promote work stress further. In relation to this, previous studies Raj (2006: 119) suggested that working extra hours, attending to ward bound patients and overworking are regarded as “major causes of occupational stress” for radiographers. Ugwu, Erondur and Umeano (2011: 14) discovered that most of the participants in their study agreed that an increase in the number of employees might be the solution to dealing with stress among radiographers.

2.5 EFFECTS OF WORK RELATED STRESSORS

A number of studies have pointed out that most of the health issues leading to burnout are the result of job stress (Lua and Imilia 2011: 2; Ibikunle, Umeadi and Akosile 2012: 2; Romano 2012: 59; Spooner-Lane and Patton 2007: 9). Ugwu *et al.* (2007: 123) warn that instability of health workers can be blamed on work related stress issues such as biomechanical and psychological stresses. According to Mankjee (2004: 151), when radiographers are not being provided with opportunity to develop their potential and capabilities it results in them not being satisfied with their job.

Adesi, Kwado and Kab (2015: 4) and Reingold (2015: 150-51) concluded that effects of work related stress on the radiographers studied were tiredness, inactiveness, absenteeism, measurable increases in work quality errors, downtime related to sick leave, accidents, workers' compensation claims, and lastly, burnout. Stress may cause workers to lose eagerness to go to work and generally take care of oneself (Ugwu, Erondur and Umeano 2011: 11).

Naqvi *et al.* (2013: 525) found increases in the absenteeism rate of employers and employees. They found that worker's lack of control over their work environment and lack of time off results in a challenge for them to be able to do their work. The researchers concluded that public health sector employees are battling with job stress. Furthermore, a cross-sectional survey study conducted by Spooner-Lane and Patton (2007) regarding the effects of burnout, revealed that the participants were negatively affected by burnout and were also somewhat detached from self. Burnout also affected other achievements outside of work. Similar studies were conducted by Higashiguchi *et al.* (1999); Imai *et al.* (2004) and Steenkamp (2014).

Being absent from one's workstation may be regarded as the broad definition for absenteeism. At the same time, presenteeism may be another factor whereby the worker is challenged by genuine ill-health, but is at work and unable to perform normal daily duties, thus performing below expectations. Furthermore, the study encourages employers to be aware of the challenges faced within the organisation (Munro 2007: 22).

According to Probst (2012: 10), data indicates that many individuals who quit their jobs do so because they are no longer enjoying their job. Fallon (2013: 12) emphasises that burnout may result in personnel that are constantly tired because they spend more time at work than they do resting, therefore resulting in continuous exposure to job-related stress.

Naqvi *et al.* (2013: 526) are right when they say that the health sector is a critically important part of the economy, with services being rendered 24 hours daily. Ugwu *et al.* (2009: 3), in support, agrees that quality of service is negatively affected when radiographers are experiencing stress. Raj (2006: 13) observed that although little was known about effects of stress on radiographers, it was a common reality in most work environments.

2.6 PROCESSES OF WORK RELATED STRESSOR EFFECTS

Several authors have noticed that work related stress impacts on ill-health in a number of ways:

- Physiologically, this may cause headaches, upset stomach, and changes in blood pressure.
- Psychologically whereby the worker might be irritable, dissatisfied with their job, feeling depressed and experiencing mental disorders as well as anxiety and fatigue.
- Cognitively, this may mean memory loss.
- Emotionally whereby one is constantly angry and having feelings of helplessness.
- Behaviourally as shown by sleep problems, substance abuse, obesity and absenteeism

(Blaug, Kenyon and Lekhi 2007: 20; Pennington 2013: 31; Kortum, Leka and Cox 2010: 232-233; Kawano 2008: 80).

The above information is in line with a study conducted in south-eastern Nigeria (Ugwu 2011: 11) which listed similar processes that may be linked to work related stressors.

2.7 WORK RELATED STRESS ILLNESS AND HEALTH

Jakab (2011: 1) indicates that the World Health Organization constitution (1948) defines health as “a state of complete physical, mental, and social well-being and not merely being the absence of disease or infirmity”. As noted by Rajan (2014: 74), it may be mistaken to think that if a person is healthy then the body is regarded as working perfectly. Another relevant study by Pennington (2013: 81) came to a similar conclusion, that doing well at work has plenty to do with being healthy physically and psychologically. Rajan (2014: 74) discovered that strong evidence exists that stressors affect human health. In support, Naqvi *et al.* (2013: 525) and Rajan (2014: 82) agree that stress is very harmful to the human body as it may increase blood pressure,

sugar levels, suppress the immune system, decrease digestive activity, reduce urine output, cause difficulty in sleeping, backache and body pains.

A study reviewed by Cohen, Tyrell and Smith (1991: 606-611) highlighted that stress could prevent one from having a healthy immune system. Furthermore, as the study was aimed at investigating the issue of the relationship between psychological stress and the respiratory tract infections recorded as per exposed worker, the outcome concurred with the research expectation that there is a link between stress and infection. The study suggested that there were lots of other illnesses that are as a result of stress.

Based on the outcome mentioned above, it is essential for practitioners to maintain good health so as to deliver quality health service (Adesi, Kwadwo and Kab 2015: 3). Ugwu *et al.* (2007: 126) suggested in their research that radiographers require constant medical check-ups to monitor early signs of psychological and musculoskeletal degenerative conditions.

Pike *et al.* (1997 as cited in Ugwu *et al.* 2009) describe work related musculoskeletal symptoms as being different types of soft tissue pain aggravated by constant activities in the daily work place. Kim *et al.* (2010: 77) agree that that work relatedness musculoskeletal disorders are worsened by continuous movement and overwork on joints. Thus, the need to identify work related stressors, stress reactions, and stress related ill-health is necessary at all levels (Levi and Levi 2000: 13).

2.8 STRESS RELATED INTERVENTIONS

Joshya (2014: 29) suggests that if the causes are known then action should be taken to deal with the stress. Richardson and Rothstein (2008: 69) argue that it is necessary to control stress although getting rid of it might be a challenge. Ivancevich *et al.* (1990 as cited by Richard and Rothstein 2008: 69) defined stress management intervention as a continuous formal way set to control existing work related stressors while dealing with their effects.

Van Den Bossche and Houtman (2003:12) propose that strong social support is essential when attempting to strengthen the relationship between the employee and the organisation; however, each network should consist of individuals with common needs and goals as well as occupying similar job levels within the organisation. Byrne *et al.* (2012: 2) suggest that there are six sources that can influence how employees manage the stress in their lives by means of motivation and ability. They are as follows:

1. Personal motivation (think very intensely about what you want and choose wisely).
2. Personal ability (be open to improving on your existing skill in order to remain up to date in your field).
3. Social motivation (make sure you are around colleagues that keep you positive and who always strive to convince you to do away habits that result in negative effects).
4. Social ability (find people that think exactly like you).
5. Structural motivation (be prepared to suffer for a good cause because the road to recovery will require a lot of sacrifice).
6. Structural ability (a successful change depends whether prior preparation is conducive to the change requirements).

The following are interventions aimed at the individual as analysed by Van Den Bossche and Houtman (2003: 7-13):

- Psychological relaxation and meditation, cognitive behavioural approaches.
- Multimodal interventions, setting goals, and time management.
- Employee assistance programmes; interventions aimed at changing one's environment.
- Psychological relaxation; interventions aimed at changing one's behaviour.

Interventions aimed at the organisations are listed as follows (Van Den Bossche and Houtman 2003: 7-13):

- Changing organisational characteristics;
- Changing role characteristics; and
- Changing task characteristics.

This review reported positive results for individual interventions although it depended on the psychological and mental health of individual. Organisational intervention yielded mixed results, as most benefits were found on well-being (Van Den Bossche and Houtman 2003: 7-13). It is thus suggested that solutions that merge both individual and organisational stress management may be the most effective solutions to manage stress (Birkford 2005: 23).

Tsai and Liu (2012: 6) suggested that results from research may be used to encourage awareness in order to help promote healthy ways of living, and to protect personnel experiencing work related stress against the demands of the hospital work environment. Furthermore, the authors proposed that the solution should match the problem because work related stress has produced so many different explanations.

2.9 SUMMARY OF THE CHAPTER

Chapter 2 represented the literature review undertaken, and has revealed that there is a lot of research that has been conducted on work related stress with regards to other health professionals. Therefore, the small number of studies related to radiography specifically, constitutes the gap in knowledge in the existing literature (Raj 2006:118). The researcher has identified detailed definitions of stress. Accordingly, consequences of the phenomenon were discovered and discussed under various subsections such as stress patterns in radiography; factors of work related stress; effects of work stress; processes of work related stress effects; stress related illnesses; and, health as well as stress interventions. Chapter 3 will outline the design and methodology that guided the study.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter presents the methodology used to explore and describe work related stressors as experienced by Radiographers at a public hospital in Gauteng, South Africa. This chapter will present the research paradigm, design, study setting, sampling process, inclusion criteria, exclusion criteria, ethical consideration, pilot study, data collection process, data analysis, and trustworthiness.

3.2 RESEARCH PARADIGM

Researchers have noted that the use of the term paradigm has increased since Kuhn's publication of *The Structure of Scientific Revolution* in the 60's and 70's (Van Der Walt and Van Rensburg 2008: 113; Aliyu *et al.* (2014:79). A paradigm is defined by Polit and Beck (2010: 14) as a world view, a general perspective on the complexities of the real world. According to Grove *et al.* (2013: 702), paradigm refers to a particular way of viewing phenomena that encompasses a set of philosophical assumptions and guides one's approach to enquiry (Polit and Beck 2010: 562). This study adapted interpretive paradigms to explore and describe work related stressors in Radiography at a public hospital in Gauteng, South Africa. The interpretivist researcher appreciates that there is no truism and therefore welcomes various meanings that are well informed and transcribes them from the outline of the aim and reference (Levers 2013: 3; Aliyu *et al.* 2014: 82). In aiming to understand and interpret work related stressors in Radiography, the interpretive paradigm is favoured. This paradigm generally relies on qualitative data collection and analysis as it generally does not begin with a theory (Mackenzie and Knipe 2006). With this in mind, the choice of proper methodology means the

researcher will not have an effect on the phenomenon and vice versa (Guba and Lincoln 1994: 107).

3.3 DESIGN

This study was a qualitative, exploratory, descriptive study. The rationale for choosing the qualitative method for this research was to explore and describe the effects work related stressors have on Radiographers in a public hospital.

3.3.1 Qualitative research

Qualitative research is distinguished by its aims which are associated with understanding certain phenomena in life and the data obtained is words rather than numeric (Patton and Cochran 2002: 2). Atieno (2009: 16) assumes that qualitative researchers believe that viewing any phenomenon in context is the best way to understand it, mainly because data is simplified and managed without destroying its quality and important principal factors. As such, in qualitative research the researcher is regarded as the most important methodological instrument in the research process (Bonde 2013: 3; Creswell 2014: 234). Qualitative research was chosen because it will aid in exploring and describing the work related stressors in Radiography, in order to promote understanding of their experiences (Van Der Walt and Van Rensburg 2008: 113).

3.3.2 Exploratory research

Exploratory research is useful in cases where the researcher has little knowledge about the phenomena (Van Der Walt and Van Rensburg 2008: 152). The key aim in this type of research is the discovery of information about the phenomenon (Offrey and Vickers 2013: 48). Polit and Beck (2004: 20) further explain that exploratory research is designed to reveal an array of information about the ways in which the phenomenon is displayed while unveiling the responsible processes hidden within. They also suggest that it is useful in investigating existing phenomena. Exploratory research was chosen as this allows the researcher to gain more insight regarding the experiences

of the participants based on the theoretical ideas that exist about work related stressors in radiography and ultrasonography.

3.3.3 Descriptive research

A descriptive study design is a systematic approach that plays an important role in describing trends and generating hypotheses about occurrences (Dewey *et al.* 2011: 5). This design can offer a comprehensive summary about a particular experience in simple terms; hence it is employed when simple descriptions of the phenomenon are required (Sandetowski 2000: 6; Polit and Beck 2004: 20). Descriptive research enables explanation of the explored ideas with the aim of providing additional information about the phenomenon.

3.4 STUDY SETTING

Data was collected from a radiology department at a level 2 hospital in Gauteng. Level 2 hospitals provide care requiring intervention of specialists and general practitioners; therefore it provides basic services such as radiography, surgery, medicine, orthopaedic, paediatric, obstetrics, gynaecology and psychiatric (Cullinan 2006). The hospital has 821 beds and six theatres. It caters for the population of the surrounding areas.

The Radiology Department has a general section (three general rooms and one chest unit) total of 18 radiographers working as shift workers. In the mammography section (one digital mammography unit), two Radiographers are stationed. In the computed tomography (CT) scanner unit (one digital computed tomography unit), two Radiographers work there, with all other radiographers also working on a rotational basis. In the fluoroscopy section (one digital fluoroscopy unit), one Radiographer is stationed within the area and others are allocated on a rotational basis. In the ultrasonography section (three digital ultrasound units), there are two Radiographers. All but three sections (ultrasonography, fluoroscopy, and mammography sections) are fully functional and provide a 24 hour service.

3.5 SAMPLING PROCESS

Non-probability, purposive sampling was chosen to select the sample. This technique is also known as judgement sampling, because the participants are chosen according to the qualities they have (Dolores and Tongco 2007: 1). This was as a result of recognising that the information required in the research could only be obtained from people who have experienced work related stress (Marshall 1996: 523). This technique is based on judgement of the researcher regarding which subjects are especially knowledgeable about the subject at hand (Van Der Walt and Van Rensburg 2008: 133).

The staff wellness department was approached for help in identifying people that have experienced the phenomenon. The people that fit the criteria were approached once permission was sought from the hospital's Chief Executive Officer (CEO). Sample sizes are typically small in qualitative research (Patton and Cochran 2002: 9); therefore, in studies of this type, samples of approximately one to ten participants are interviewed until data saturation is reached. Data saturation occurs when the researcher no longer receives new data to add to the information collected from previous interviews (Malterud, Siersma and Guassora 2016: 1758). Bode (2013: 5) adds that data saturation may depend on a variety of factors such as the researcher, target audience, research audience, scope, and availability of resources. Regardless of the sample size, qualitative research typically aims at sampling broadly to ensure that all important aspects and variations of the phenomena under study are captured within the sample (Elliot and Timulak 2005: 151). In this study, the final sample size was 10.

3.5.1 Inclusion criteria

- All radiographers who have experienced work related stressors and consent to participate without persuasion.

3.5.2 Exclusion criteria

- All community service radiographers.
- The Head of Department in Radiography Department will be excluded from the study based on the fact that the study is focused on personnel that are involved with patients on a daily basis.

3.6 ETHICAL CONSIDERATIONS

Once ethical clearance was obtained from the Institutional Ethics Research Committee (IREC) (REC 126/16) (Appendix 1), gate keeper permission was sought from the Gauteng Department of Health (Appendices 2a and 2b) and the hospital CEO (Appendices 3a and 3b). An information letter (Appendix 4) which provided a brief outline of the study while highlighting the risks and benefits thereof, accompanied by a consent letter (Appendix 5), was given to all prospective participants. Use of codes for participants during data analysis was employed. Only the research team was allowed access to data collected.

Mandal *et al.* (2011: 2) listed three principles of research as established by the Belmont report which was published in 1979. According to the report the principles listed with their matching application are as follows:

- Respect of persons; this refers to participants being treated as agents with freedom to act independently, as well as protection for those participants with little or no capability to deliberate about personal goals. This can be achieved by means of using informed consent.
- Beneficence; this reflects that participants are not to be harmed. Therefore, benefits should supersede any amount of harm they might be subjected to. This is possible when the risks and benefits are assessed systematically.

- Justice; this emphasises the fair distribution of the benefits and risks. All participants must therefore be selected voluntarily.

3.7 PRE-TESTING OF THE DATA COLLECTION TOOLS

Before the main study was conducted, pre-testing of the interview guide was conducted. The guide was pre-tested on three radiographers from the hospital who were not then selected for the main study. All the questions were well understood. Therefore, there were no changes on the guide.

3.8 DATA COLLECTION PROCESS

Semi-structured interviews were used to collect data. DiCicco-Bloom and Crabtree (2006: 315) state that semi-structured interviews are commonly employed in the case of data collection in qualitative research, because they are specifically designed to gather the views of participants on the phenomenon (Offrey and Vickers 2013: 48). The data collection process was conducted at the hospital so that the interview venue was easily accessible and thus encouraged attendance. Permission was sought from the participants to use a voice recorder during the interview sessions. Some of the information was written in a diary. An interview guide was used to collect data (Appendix 6). With regards to this particular study, the interview was initiated by a main research question and the interviewee was probed with further questions. Some questions were closed ended and some open-ended which allowed further questions to develop during the conversation (Van Der Walt and Van Rensburg 2008: 152), thus providing rich information. Skills such as proper concentration, listening and using proper responses where necessary were maintained by the researcher as an essential component of the process. Trust, harmony and good relations were maintained as suggested by Gill *et al.* (2008: 292) because these factors contribute to the quality of the data collected.

At the end of each interview the participants were thanked and asked if they had any further information. A summary update was given to participants on completion of interviews. Each session of the interview did not last for more than an hour. All interviews were conducted by the researcher over the period of a month, in February 2017.

3.9 DATA ANALYSIS

Qualitative data gathered from the interviews were analysed using Tesch's eight steps of thematic analysis as described in Creswell (2009: 186). These steps involved:

- Reading through all transcripts to get a general impression of the collected data.
- Writing down in the margin thoughts that emerged from the data.
- Making a list of all topics. Similar topics were clustered together. These topics were preliminary organised as major topics, unique topics and leftover topics.
- Topics abbreviated as codes were written next to the corresponding segments in the data. Any other topics or codes that emerged were written next to the appropriate segments of the text.
- The most descriptive wording for the topics was used and was turned into subcategories.
- Related topics and emerging list of categories were grouped together.
- Preliminary analysis of data by assembling data that belong to each category from which themes later emerged.
- Existing data was re-coded.

3.10 TRUSTWORTHINESS

Van Der Walt and Van Rensburg (2008:118) state that qualitative research is sometimes treated with doubt and condemned for lack of accuracy. Given this point, it is therefore imperative to ensure trustworthiness of data in qualitative research. Trustworthiness refers to the extent to which a research study is

worth paying attention to, worth taking note of, and reflects the extent to which others are convinced that the findings are to be trusted (Babbie and Mouton, 2001: 276). Lincoln and Guba (1985 as cited by Van Der Walt and Van Rensburg 2008: 119) suggest four criteria for developing the trustworthiness of a qualitative inquiry, namely, credibility, dependability, confirmability and transferability.

3.10.1 Credibility

Credibility refers to truth value (Van Der Walt and Van Rensburg 2008: 119). The research must enable the participant to recognise their own experiences in the research findings. This was achieved by ensuring that participants' responses were not misinterpreted during data analysis. To ensure credibility in this study interview sessions were audio recorded then transcribed. Information was probed until data saturation. In general, data saturation happens as soon as there is no more new evidence contributing to the inquiry (Malterud, Siersma and Guassora 2016: 1758). In establishing confidence in the truth of the findings, during report writing, voice recordings were replayed repeatedly to ensure that all the information was correctly transcribed.

3.10.2 Dependability

Dependability refers to the stability or reliability of data over time and conditions in order to ensure consistency of the study (Van Der Walt and Van Rensburg 2008: 119). Gordon (1975 as cited by Barriball and While 1994: 330) argued that keeping the questions of the interview exactly the same for all the participants is imperative. This structure produces consistency and reasonable stability of research results in any setting (Miles and Huberman 1994: 278). An audit trail was maintained through safe keeping of raw data of each interview for future reference.

3.10.3 Confirmability

Confirmability refers to the neutrality of the study (Van Der Walt and Van Rensburg 2008: 119). Van Der Walt and Van Rensburg (2008: 119) explain that this criteria guarantees that findings, conclusions and recommendations

are supported by data and there is internal agreement among investigators regarding interpretation and the actual evidence. This construct ensures objectivity and ensures that the researcher's biases do not affect the conclusion (Miles and Huberman 1994: 278). Voice recordings of the interviews were made to reflect the participants' voices. The researcher's interpretations were scrutinised by the research supervisor who acted as an independent coder to ensure that the findings were the Radiographer participants' lived experiences.

3.10.4 Transferability

This construct highlights the need to know if the conclusions of the study have any significance (Miles and Huberman 1994: 279). According to Van Der Walt and Van Rensburg (2008: 119), transferability refers to the degree to which the results can be generalised to other settings or samples. In order to assess the extent to which findings may be true of people in other settings, similar projects employing the same methods but conducted in different environment could be of great value. To ensure transferability, rich and thorough description of the research setting, the study participants, and of the research processes, was accomplished.

3.11 SUMMARY OF THE CHAPTER

Chapter 3 has outlined the methodology guiding the study therefore giving it direction. Ng and White (2005: 663) pointed out the necessity for qualitative research in the field of radiography. This chapter has offered a detailed description of how the study was conducted so as to achieve the aim of the research. The research design of this study was qualitative, descriptive and exploratory. The study's initial aim was to establish the meaning of work related stressors in Radiographers. After defining the phenomenon, exploration of the phenomenon will take place followed by description of the how the participants perceived and experienced the phenomenon. Chapter 4 will present the findings of the study.

CHAPTER 4

PRESENTATION OF FINDINGS

4.1 INTRODUCTION

This chapter explores and describes the experiences of Radiographers in a level 2 hospital in Gauteng South Africa. Data was elicited by means of semi-structured interviews. A question guide was used to ask a list of questions that would generate rich data from the participants who have experienced the phenomenon. All the interviews were recorded on an audio recorder. The room used for the interview was inside the hospital premises but had limited sound distractions therefore audio recording the conversations was possible.

As advised by Creswell (2014: 245), data analysis occurred simultaneously with collection and the write-up of the findings. Therefore, after each interview was completed data was transcribed and coded. During the coding of data main themes emerged which helped towards identifying the subthemes and later the categories. All the interviews were initiated by the main research question as per the interview guide. Creswell (2014: 245) states that in cases where data is rich and dense, data should be collected into small numbers of themes to allow easy conceptualisation of the participants' accounts. The fact that the interviews were one-on-one allowed deep exploration into personal issues that participants are faced with. This chapter presents the data that was collected and analysed. The participants' profiles are presented first in terms of participant demographics. Due to the fact that there was only one Ultrasound radiographer interviewed, data will then be integrated into that of the nine participants.

4.2 DEMOGRAPHIC DATA

A total of 10 participants were identified to have experienced the phenomenon. All the participants that agreed to the interviews fitted the criteria. Table 4.1 shows the participants in terms of age group, work experience, job level, job category, and education level. Non-probability purposive sampling was the method chosen by the researcher as this allowed the researcher to choose only the participants that according to judgement had experienced the phenomenon. Their ages ranged from 25 to 65 years of age, with the majority of the participants being between the ages of 25 and 40. The ten participants were also classified into job levels. Data saturation was reached upon interviewing the eighth participant. However, two additional participants were interviewed to confirm data saturation. Out of all the participants, only one was single, one was widowed and the rest of the participants were married. All participants had children and some had small children. All participants had service year periods of 5 years or more. The educational level of the participants varied from participant to participant.

Table 4.1 Demographics of the Radiographers

Participant Number	Age (years)			Marital status			Job grade level			Qualification		
	25-40	41-50	51-65	Married	Single	Widow	1	2	3	Cert	NDip	BTech
1	✓				✓		✓				✓	✓
2	✓			✓			✓				✓	✓
3			✓	✓					✓		✓	
4	✓			✓			✓			✓	✓	✓
5	✓			✓					✓		✓	
6		✓		✓				✓			✓	
7			✓	✓					✓		✓	✓
8	✓			✓				✓			✓	
9			✓			✓		✓			✓	
10		✓		✓			✓			✓	✓	

Key

P = Participant

Cert = Certificate

NDip = National Diploma

BTech = Bachelor of Technology

4.3 CONCEPTUALISATION OF WORK RELATED STRESSORS

The thematic analysis that was used on transcripts elicited key concepts that could be identified from the data. The following three themes emerged during data analysis:

- 1) Personal well-being of Radiographers.
- 2) Decline in quality patient care and impaired radiography service.
- 3) Environmental enablers.

These themes are relative to each other and assist in realising the participants' experience as per the interviews conducted. These formed the main themes of the study (Table 4.2). The subthemes that emerged from the three themes were: Loss of sense of purpose; General health; Social life; Staff burnout; Shortage of resources; Management style; Staff personal beliefs and suggestions. In the following section, the researcher presents each theme and its related subthemes. To justify the developed theme and subtheme, the quotations derived from the transcribed interviews are used. A sample of an interview transcript is provided (Appendix 7).

Table 4.2: Summary of themes, subthemes and categories that emerged from data analysis

Theme	Subtheme	Category
1. Personal well-being of Radiographers.	1.1 Loss of the sense of purpose.	1.1.1 Feeling of uncertainty and loss of desire to go to work.
	1.2 General health.	1.2.1 Clashing of interest between work and personal health. 1.2.2 Need for medical attention.
	1.3 Social life.	1.3.1 Family responsibilities. 1.3.2 Hobbies and commitment.
2. Decline in quality patient care and impaired radiography service.	2.1 Staff burnout.	2.1.1 Not enough time off from work. 2.1.2 Attitude and staff morale. 2.1.3 Exhausted staff. 2.1.4 Working under pressure.
	2.2 Shortage of resources.	2.2.1 Staff hiring and retention. 2.2.2 Increased workload. 2.2.3 Consumables and equipment.
3. Environmental enablers.	3.1 Management style.	3.1.1 No recognition for hard work. 3.1.2 Lack of transparent and open communications. 3.1.3 Suggested management intervention efforts.
	3.2 Staff Personal beliefs and suggestions.	3.2.1 Intervention efforts by staff. 3.2.2 Need for support from management.

4.3.1 Personal well-being of participants

The participants had different views about work related stressors in radiography. When providing information on work related stressors, they showed that these interfere with their sense of purpose, health and social life. These concepts form the subthemes against which to portray data from the interviews.

4.3.1.1 Loss of the sense of purpose

Theme one explored and described the lack of work-life balance experienced by participants. The findings of this study revealed that most participants had the feeling that they do not have any motivation to look forward to at work. They felt that they have somehow lost direction and their sense of purpose at

work because of the challenges facing them at work. This is further illustrated in the subthemes that emerged during data analysis and the feeling of uncertainty and loss of desire to go to work. The following excerpts illustrate this:

“...the difficulty is not knowing when it’s gonna be fixed, you don’t know for how long you will like carry on with your stress...” P 1

“...along the way driving you feel that NO maan how I wish I wouldn’t be going to work the following day...” P 5

“...I cannot attend to issues at home because I’m still bothering what is going to happened today; and tomorrow I’ll be facing the same thing...” P 7

“...and it makes you not to enjoy your job and waking up coming to work it’s a hassle..” P 7

“...I just feel like quitting sometimes.” P 9

“If we try to boycott they will listen to us.” P 7

This participant firmly added that:

“...the first thing you should do is not to come to work the second thing you could do is to come to work and not actually perform your duties the way you expected to perform and the third thing to do is to resign.” P 6

4.3.1.2 General health

The importance of being in good health in order to perform their duties was apparent in the two subcategories that emerged from the above subtheme. The participants highlighted clashing of interest between work and personal health, as well the need for medical health.

This was evident in these quotes:

“They might say that there is wellness clinics that we need to go to but when do you get time because once I go to that wellness clinic it is gonna be an hour or two that I am not here at the end of the month they want their stats.” P 2

“...even though there is a wellness department at the hospital we don’t always have time to utilise it... Because you feel you are gonna leave the department and the other people are gonna suffer because there is one person less.” P 3

The same participant adamantly continued to express the discomfort of leaving work to go and attend to one’s own health issues.

This was evident in the following quote from the individual interview transcript:

“...but still I mean you don’t feel like you are doing the right thing by leaving your workstation and going to sit somewhere else.” P 3

The following excerpt illustrates how the participant felt obligated to continue working even if feeling stressed:

“...but being a radiographer, health worker whatever stress one has you just have to soldier on and do the patients.” P 5

The participants reported the need to seek medical attention due to how the stress affected them physically or psychologically. They expressed this in a number of ways, that their well-being was not normal and needed medical attention.

The following excerpts indicated the psychological effects experienced by the participants:

“...somewhere come along with a way of dealing with that stress... if maybe they seek counselling they should.” P 1

“...you are so tired your mind is not working properly.” P 2

In the following excerpt the participant added, referring to the psychological problems they experience at home that they may need counselling for:

“...Like other things like maybe from home you know that you can go to wellness to talk to someone and come back.” P 4

The following quotes from the individual transcripts provide an indication of how the participants felt with regards to being ill:

“...I’m sick because we work hard... I’ve got bunions. I’m sick because of this stress!” P 9

“All I know is that stress is not good for you because you end up feeling sick...” P 2

“...certain situations demand that what have stressed me, make me to take the medication... if you take some medications you see, at least to cool you off on what has stressed you it helps but I don’t want to depend on that but certain situations demand that what have stressed me make me to take the medication...” P 7

4.3.1.3 Social life

The participants highlighted that their social life was adversely affected because it was difficult for them to maintain a lifestyle, take family responsibilities, and honour commitments outside of work. Thus, two categories emerged from this subtheme, namely family responsibilities, and hobbies and commitments. With family being an important part of a person’s life, a majority of the participants felt their work had a negative effect on their

lives at home with family and friends. The participants were evidently unable able to cope in their home situation because of their stress at work.

The excerpts below displayed this:

"I find that it is difficult for me to do other things that I'm supposed to do. For example I have got children, small children that expect help with their homework..." P 2

"...you feel like you maybe abandoning your family." P 2

"...and you even neglect your family." P 1

"...your life somehow it affects the people that you stay with such that there is a little bit of tension, I cannot say what I've left at work I will leave it at work. I carry it home and it makes the situation uneasy at home." P 7

"...you always stressed whenever you go outside whether you go home or wherever you still carry that stress with you." P 4

"...the family life is there but when you are so stressed and tired; you end up not giving them enough attention." P 2

"I am a mother of two, I don't have a helper at home I need to do homework with the kids, combining with the stress from work and the homework it creates even more stress." P 5

"Sometimes it can affect your family, because you end up snapping on your family for no reason." P 6

"You are angry at work and when you get home you are still angry and you are grumpy and all of those things." P 6

"I cannot attend to issues at home because I am still bothered about yesterday because tomorrow I'll be facing the same thing." P 7

"Ahhh I don't have enough time to spend with my kids I have got a 13 year old boy, it's difficult to help him with homework because I am always tired." P 9

"...somehow some conflicts but even if the thing that stressed me at work if it has to come at home there will be some conflicts and misunderstanding but the main issue is where I came from." P 7

Concerns were expressed regarding the need for time out to spend with family or friends. Doing personal things was clearly a challenge as expressed by participants during the interviews.

This was evident in the following excerpts:

"You may have plans for the weekend or want to have a weekend getaway, and maybe you get a call on a Friday that Mr so and so is not coming to work or on the weekend or maybe the night then you have to cover, so all your plans just get squashed." P 1

"...it's tough because there are some things that you have to attend to as a parent as an adult who has a family." P 3

"One could adopt certain hobbies such as singing and doing sport." P 1

"I end up not getting enough time to do my personal things." P 8

"...when I am constantly relieved late from work it affects my commitment to appointments outside of work." P 1

4.3.2 Decline in quality patient care and impaired radiography service

All Radiographers participating in the study advocated that they were affected by stressors emanating from shortage of staff, lack of resources, and limited time off, as well as increased workloads. The personal accounts provided by the participants with regards to the causes of stress indicated that for them to provide a quality patient care and services they have to be satisfied with their jobs.

4.3.2.1 Staff burnout

It was evident that limited time off from work adversely impacted on the attitude of staff towards their work as well as their eagerness to go to work on a daily basis. The participants also expressed how this situation with stress frustrated them in various ways. They raised concerns that they had to work overtime in order to cover the shortage of staff. The participants reported that it also added to the amount of stress as it forced them to sacrifice their time off in order to cover the department where necessary. In this theme, the decline of quality of patient service was explored and described in relation to burnout. The challenges of working under pressure had also been outlined as per responses from the participants. The following is the subtheme and the categories that emerged there from.

The participants highlighted that not having enough time off work affected their normal way of functioning as individuals. According to their accounts they are faced with an imbalance in and outside of work as a result. The following excerpts illustrate this:

“...even if you work any weekend or night you won’t get any off any time soon... You always here at work.” P 1

One participant indicated that they had to research cases of interest after work in order to keep up or learn more about certain pathologies therefore cutting down on the amount of time they had to rest, adding to the fact that

there was already limited time for rest at work. The following anecdotal accounts illustrate this:

“I have to go and research more because I’m gonna face it some other time so if I don’t research it now because the next time still I won’t know this thing. So Yah unfortunately work you end up taking home, because the eight hours is never enough.” P 2

“Like I only have eight hours at work and during that I am allowed to eat, I am allowed to rest but because of all that I have to do I end up not getting enough time to rest.” P 2

The following participant feels that work continues even when they get home, as illustrated in this next quote:

“...Work at home and at work also.” P 4

The following statement advocates that the participant was at work for the majority of their time:

“...actually we spend most of our time in the work environment.” P 5

The participants expressed that there was nothing encouraging about going to work. They mentioned various reasons such as their feelings of being demoralised, of being frustrated, as well as difficulty in maintaining a positive attitude. However, it was evident from the participants’ responses that most of them were still actively holding on to the positive aspect of the profession (the medical diagnosis of patients); despite them feeling as though they had lost their sense of purpose.

The following participant’s comment highlighted the issue of morale:

“...it almost seems to be impossible cause you try and say let me be positive about doing my job, let me be happy I don’t know what the day brings

let me stay positive but somewhere along the way you gonna lose track of that positive attitude.” P 1

“...like the simple things we are supposed to do as public servants like greeting the patients and introducing yourself and maintaining a good communication and conversation its, it just gets boring you know... you don’t see the need because you are just irritated.” P 6

The same participant added that:

“...I don’t enjoy coming to work anymore. I have to drag myself, but what choice do I have?” and goes on to add “If I was somebody else I would always submit sick notes.” P 6

Some participants said they strived to remain positive, keeping in line with their responsibility as a professional.

This was evident in the following quotes:

“...and you cannot be rude to your patient no matter how badly the patient presented to you, I must always be professional...” P 2

The following statements by the participant showed that participants believed in the effort of remaining professional even though demoralised:

“...It is my obligation I have to do this for the sake of the patients and the smooth running of the department.” P 5

“...So whenever one comes to work, you find the corridor full especially and it demoralises you so it is very stressful...” P 5

The researcher noted that the following participant expressed concern about performance at work because of stress. The following statement confirmed this.

"You know you cannot put up with the situation, when you are under stress because you are always curious, what if I am not going to exacerbate the situation so hampers your progress it also affects your performance at work..."
P 7

"...I mean you are frustrated yourself and you are not happy...." P 6

The morale of staff was also affected by attending to other people's work. The following excerpt indicates this:

"Knowing that someone is getting paid for being on call and that person is never here. They will talk to the requesting doctor send him and tell them that I said they must do this, doing that in the comfort of his or her home. Yet you've got patients to do here, you have to do this thing, this special exam which will be reported the following day by the radiologist who was on call the previous night. It makes one really angry because that person is getting paid for that." P 5

The participants were of the opinion that the long hours they spent at work impacted them negatively even when they got off work because they carried all that stress home with them; as a result they were constantly tired. The following excerpts convey this:

"...you are always tired and that actually causes stress." P 6

"...Every time I get home I'm so 'bushed'..." P 2

"...by the time you get home you sooo tired you can't do anything else..." P 3

The participant above additionally stressed the extent of exhaustion that was experienced:

"....yes you just collapse when you get home..." P 3

According to the participants' responses, it was evident that working under pressure ran increased the risk of patients being misdiagnosed as well as substandard work being produced. The participants also noted that because of the pressure they worked under, they constantly argued with patients. This participant comment attested to the above:

"So there might be a possibility that sometimes you may even misdiagnose because of all the pressure of the work that you have....if you don't have enough time to check everything else you might miss small things, so you might miss something that could change the diagnosis of the patient or that could help the patient." P 2

"...You end up shouting patients, you don't go to tea, you don't go for lunch and you become short tempered." P 10

The following quotations refer to the conditions staff works under:

"...working conditions, they are not favourable." P 7

"...But all I can say is it is too stressful to work here." P 3

Participants have expressed that after hours duties have a lot of challenges when they get requests that require radiologists. The following quote illustrates this:

"We have a radiologist on call but that person will never be here especially at night but they will leave a message that such and such a thing when a doctor requests this thing it must be done like this." P 5

4.3.2.2 Shortage of resources

According to the participants the ratio of staff compared to patients was surprisingly abnormal. Some participants remembered that several years previously the department functioned with. Some of the participants reported that the shortage in all resources is blamed on a lack of funds. Retaining of

staff was also highlighted as a concern. Below are the excerpts from the individual interviews:

“...it is a strategy for retaining staff that is lacking in the public sector.... As long as there is a person they think things will go on.” P 2

“radiographers in the public sector leave because once they qualify most of them want to go to the private sector because they give them more money and they believe that they will always be covered because there will always be the next person that they are going to work with.” P 2

This following participant was adamant that managers could assist in hiring more people. This was evident in the following statement:

“...I believe managers can try to motivate for hiring of more staff.” P 4

The following quote from another participant had a similar tone to the above statement:

“...If you need staff to achieve what you need to achieve then you must hire staff...” P 6

The participant suggested that government could review the initiatives put in place because when these are not working they add to the workload. The following excerpt illustrates this:

“When our government, national government, introduced this Primary Health Care idea in my opinion this should have led to surely a speedy and qualitative production in the department but now around the Ekurhuleni area – the area that we serve – I can count more than five clinics that are supposed to work 24 hours but clearly it’s those clinics who after hours they all send these patients to the main hospital. If that can be implemented as it was the intention of the Health Department nationally then this could have gone a long way but unfortunately the Primary Health Care system isn’t working”. P 5

With reference to work related stressors affecting radiographers, the following participant responded by listing lacking lack of resources:

“Shortage of staff, work load, shortage of resources...” P 10

The same participant is quoted additionally stating that:

“...they must hire staff, maybe even that is gonna help us to reduce the workload. If we are many then we can work nicely.” P 10

The following participants' responses also advocated the need for more staff being employed:

“...Lady, you know if we can have enough staff, like after hours issues of theatre, issues of mobile units, in the wards and casualty. If we can have enough staff it would go a long way in reducing our stress level...” P 5

“...organise extra staff so we get to relieve each other so that you don't have one person having to work three weekends in a month...” P 1

The participants expressed the urgency of increasing their numbers with permanent staff rather than expecting the staff to find a way of coping on their own. They reported that management did not see the urgency because work was going on as normal. The following are some of the participants' recollections:

“In 1986 when I first came here there was two radiographers working at night and two radiographers working on weekend and the stats then, there were very few patients done.” P 3

The participant added that:

“...these days 2017 we still have two radiographers on night duty and weekend but it goes close to a 100 patients per day in eight hours.” P 3

The following excerpts attested to the above recollections:

“...Here we are being overworked far more than what we used to have in the old regional hospital.” P 5

“No action has been taken. It’s been years and nothing has been done about it instead you keep on getting an increase workload time and time again.” P 6

This participant expressed this suggestion with regards to reducing the workload in relation to radiographers:

“... I still say if I could get somebody extra or permanent that is here eight to four like me because we would share the jobs...” P 2

“I think work load is related to shortage yah so as a result we have to do a lot of work...” P 6

The participants raised concerns about one mobile unit which was used to service all the wards in the hospital and with this not being a small hospital it was a major challenge moving from one ward to the other. The participants also reported that the shortage of relevant resources such as consumables hindered their ability to provide the proper service for patients. The following participant was quoted as saying:

“...if maybe you’ve got a problem with your patients or equipment, whatever accessories that you are using, those things (alone) they create stress. You keep on reporting isn’t it so!? To your HOD (Head of Department) and then they don’t do anything about it...” P 4

The above participant continued to describe the seriousness of the issue of lack of resources. The researcher notes that the participant was expressing this with negative emotion when they recalled the length of time they waited for the resources and the participant appeared to be disconcerted by how

doctors did not seem to understand that it was not their fault nor was it their responsibility. This was evident in the following quotes from the participant:

“...Like now we don’t have linen savers, we don’t have roller towels, we don’t have films. It’s not that they don’t know. They do know but what are they doing about it? Nothing. And how many years back have we had that problem especially of films? Like CDs maybe to write – I think it’s more than six months now. And then all the doctors are fighting with you as a radiographer.”

P 4

The following participant reported the challenge they faced when they attend to ward radiography with only one mobile unit available for all the wards in the hospital:

“...there is only one portable unit that’s in ward two, now let’s say you have to go to another wards, say in ward five... at the far end (referring to distance between wards) you have to travel through the other departments to go and do that because you are afraid that if do not do that there will be a backlash that if you did not sort out that patient...” P 7

The participant continued to explain how they felt they were not to be blamed for the decline in service level due to lack of resources. The following excerpt illustrates this:

“Customers they expect a certain level of service, you understand? But because of the resources that you have you are unable to do so which is not your fault per se... You understand...” P 7

The participant further reported that it was not fair for patients referred to the hospital by outside clinics to not be serviced right because either the system was not working or there was absence of resources when they came. The following excerpt illustrates this:

“I’ll give you a literal example somebody is coming from the clinic, he is coming to the x-ray department the PACS [picture archiving and communication system] system is not working, that patient has been told to bring the x-ray from the hospital, there is no films there is no PACS system what do you do for that patient?” P 7

4.3.3 Environmental enablers

It was evident in the personal accounts communicated by the participants that dealing with stress required a collective effort. The participants had also revealed that they felt their suggestions should have also been considered and that they could play a role in dealing with the stress themselves. They wished to be taken seriously, taking into the account suggestions made by them. In this theme, various strategies for incorporating intervention by management as well as staff were explored and described. The findings reveal the need for knowledgeable managers with acceptable management style that could also aid in recognition of hard work by the staff. This theme focuses on efforts required to achieve a positive outcome and create a workable environment.

4.3.3.1 Management style

According to participants’ responses, the responsibility for trying to alleviate stress was dependent on managers. There was a common consensus where the participants felt that there was an absence of openness and transparency from the side of management. They were of the view that managers were the main source of the solution for managing stress in the department because they could help deal with shortages as well as organise counselling. The participants also expressed concern regarding the level of qualification of managers. Participants reported that all their hard work was in vein as management only confronted them if there was evidence that they had done wrong. Participants felt that they needed management to recognise them not only as workers who are important for production but as an integral part of a unit.

The following quotes revealed the need to be recognised as expressed by participants:

“...I think the other one not being taken serious.” P 6

The following excerpt adds that:

“Even if your suggestion has a solution it’s not gonna count because management didn’t say yes on that...” P 4

The participants reported that the staff members felt oppressed. The following statement affirmed this:

“...They must not ehhhh oppress us (pressing thumb on table). They think that the patient is the one who is always right and then we are not right.” P 10

The following statement indicates that the participant felt that not being appreciated demotivates the staff and further promotes stress.

“...I feel there is no appreciation at all and eehm when people come into your working area and try to control how you work whereas they don’t know how to conduct that service, it demotivates you and it causes stress.” P 3

The following excerpt added to the above statement:

“...and they should somewhere come along with a way of dealing with that stress and help them to feel more appreciated...” P 1

The participants reported that a channel of communication with management could help give them a sense of purpose and belonging within the organisation. It was therefore clear that the participants did not appreciate being kept in the dark about why certain things were not happening when they were actually necessary. Therefore, the participants felt that the absence of communication within the hospital was fuelling the amount of problems faced

on a daily basis. Participants were also of the view that managers needed to acquire a certain level of management skills in order to manage at any level.

The following quote illustrates how managers may at times use superiority on staff:

“...because of your superiority you tend to say no this is how you would deal with it. So it creates tension ultimately and results in stress...” P 7

The following participant questioned the ability of managers who wanted to lead with the possibility of not having a relevant qualification:

“...Do they even have any management qualifications or certificate? Because it helps a lot, it gives you... the psychology of the workload, the psychology of the environment...” P 6

This participant further elaborated the above and added that:

“I think if it can be made compulsory for anyone who is in a management position at least to do a certain course it shouldn't have to be a degree or a diploma but basic principles of management its very imperative, very important because it would give them a picture and like studying for anything it sort of opens your mind you see things from a different perspective”. P 6

The following are some of the participants' responses in relation to the absence of communication from managers:

“...lack of interaction between radiographers and the supervisor.” P 7

“The biggest problem I think is communication by the ‘powers that be’...” P 5

And further emphasises on the absence of communication from managers:

“...like I said communication is lacking in the department, with our immediate management within the department... Top management, armchair leadership, armchair management, up there; they are not conversant with what is going on in the department...” P 5

When referring to the call for management to listen to their concerns some participants expressed themselves as follows:

“... I think they must have the clear ear.” P 10

“...But now if management could hear and listen to the workers I think that would help...” P 3

The participants expressed a need for efforts that are recognisable from management in order to facilitate dealing with the stressors that they were faced with and therefore, mentioned a few suggestions that could be undertaken by management throughout the interviews. This was seen in these excerpts from the interviews:

“...management right now can go an extra mile to organise extra staff...” P1

The participant further added:

“...maybe management could also organise activities like sport so that it can be exciting to go to work...” P 1

With reference to management efforts one participant was quoted stating the following:

“Means should be put into place to make sure that staff works under less stressful environment. It can come from management...” P 2

Additionally, participant stressed the need for management interaction:

“...they should be there; they should be there they should understand and not just expect results without knowing what the other person puts into the job that they do to get the results.” P 2

“Number one is what I have already said, communication, secondly if our management, top management, can also interact on some of the issues that affect us radiographers... So if management could communicate with the radiographers I’m sure it can eliminate a lot of difficulties...” P 5

“...management could be able to screen and assess and see what is important, what is not important, it would be better and after seeing that and analysing that action all the time and if action is not taken at least explain to the staff, why?” P 6

“Lines of communications have to be improved, Yah and workshops...” P 7

The following participant found it humorous to even think about leaving work early, as though it is an impossible mission.

(Laughing) “I need half days Every Friday, (Laughing), because I want to go rest my mind.” P 2

The researcher also noted that this participant expressed the following statement with a lot of emotion:

“...and they must listen to us and after listening they must promise to give us something as well as sort this problem...” P 9

4.3.3.2 Staff personal beliefs and suggestions

The participants revealed that being satisfied with their job was highly dependent on the environmental enablers. They therefore highlighted that teamwork could also be key towards improving their environment. The participants suggested that integration not only with managers but among

themselves could play a major role in ensuring a workable environment. In order to achieve this they had certain expectations from management, however management was ignoring their call to them. Some participants felt that it was very important for management to show support for the staff. The above was evident in the following quotes from the participants' transcripts:

"For me whatever you tell management, if the management says 'No' it's a 'No!'" P 4

"...in my opinion management won't do anything, they expect work to be done at the end of the day..." P 2

"...I think management should be more involved in caring about the staff..."
P 1

"I don't think management is helping us when it comes to stress" P 4

"...if our management, top management can also interact on some of the issues that affect us radiographers..." P 5

"...You know management at times I feel like they... as long as the work is done or the job is done they actually don't care..." P 8

"...I think management they don't understand what is happening on the ground if they do understand and since nothing has been done they don't care as long as they run the hospital..." P 5

The researcher also noticed that the following participant was considering seeking another job where they might be noticed and heard. This is evident in the following excerpt:

"...I would rather go to a place where they will listen to me where they will do things right for me..." P 9

So, participants felt that sometimes the department is managed by people who do not understand how they work. The following quote illustrates this:

“in our institution there is something that I don’t like, in my 30 years odd that I’ve worked in the public sector, after hours at night we have so called Night Superintendents and those are just ordinary Sisters who is maybe a Matron who will come when there are problems like problematic patients especially escorts who feel that no the flow of patients is slow... Theirs is just to make sure that they’ve got a report the following day they have to give to their Matrons ‘This is what transpired in the x-ray department’”. P 5

The participants mentioned various ways in which they individually felt they could assist towards improving the situation of stress related to their work.

The following quotes from the transcripts expressed this:

“...Maybe if we also should go up to them and say I have got this suggestion I know that it will help me decrease the stress.” P 2

This participant reported that teamwork could be a positive start.

“...if the staff is working together. Cooperation and understanding within the staff of the environment then it would make things better...” P 3

The following participant also feels that consultation among staff on a regular basis may also bring some relief of the stressors that they experience. The following excerpt outlines this.

“... we hold weekly meetings for about 30 minutes or so every Monday or Friday to discuss issues that affect us. It can alleviate some of the difficulties that we have to endure during working after hours even during the day.” P 5

The following participant feels that some time spent together outside of work may be a positive way for them to interact with one another:

“Maybe we can organise picnics when we are off so that we can go outside and reduce stress...” P 10

The following participant’s quote highlights the need for divine intervention:

“(Laughing) now we have to invite in Priests and Motivational speakers. Yes to come and encourage the staff...” P 7

Some participants felt that the study could make relevant authorities aware of their problems and relook at the management style. The following quote illustrates this:

“Back to the drawing board, assess the input that maybe you and others in your research can give them, maybe they will look into that” P 5

4.4 SUMMARY OF THE CHAPTER

An enabling environment is based on meeting the basic needs of the workers. The number of patients serviced at government hospitals has increased drastically over the past decades; however the number of Radiographers has not been increased in line with the changing numbers of patients. The findings of the study confirmed that relief of work related stressors experienced by Radiographers is subject to the knowledge that managers have about managing. The aim of the study was to explore and describe the experiences of Radiographers in a public hospital in Gauteng. Three main themes, subthemes and categories emerged during the data analysis. Chapter 5 will discuss the findings of the study.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1 INTRODUCTION

This chapter presents the discussion of the findings of the study. This is based on the analysis and interpretation of the experiences of work related stressors by Radiographers. The description of the setting as well as the use of rich thick descriptions from the findings was detailed (Creswell 2009: 191,192). All viewpoints collected from the interviews were analysed using Tesch's eight steps of thematic analysis as described in Creswell (2009: 186).

In this chapter the researcher presents a discussion that makes sense of the results in a brief but comprehensive manner (Van Der Walt and Van Rensburg 2008: 193). The demographic profile of the participants will be presented first. Secondly, the themes will be discussed as well as their emergent subthemes based on Table 4.1, as follows: (a) Personal well-being of Radiographers, (b) Decline in quality patient care and impaired radiography service c) Environmental enablers. Thirdly, the discussion of the findings in relation to the aim of the study incorporating literature that was consulted during the study (Van Der Walt and Van Rensburg 2008: 193), as well as new literature that was discovered during thematic analysis.

5.2 DEMOGRAPHIC PROFILE OF PARTICIPANTS

The participants involved in the study all work at a level 2 hospital in Gauteng. They were registered with the Health Professionals Council of South Africa (HPCSA) in their respective categories. The demographic profile of the participants will therefore, be discussed in detail.

In this study, the participants aged 25-40 years were 50%; aged 41-50 years 20%, and age 51-65 years 30%. These findings are similar to findings by Reingold (2015: 156) in the USA on radiographers' work related stressors and reduction of work related stress. This study had a low percentage of older participants (55 years and older), with 28.6% in that group. Similarly, studies by Adesi, Kwadwo and Kab (2015) showed that most of the participants were between 20-29 years and constituted 45% of the group. In Rajan's (2014) study conducted in India had a majority (52.25%) of younger participants in the age group 25-35 years.

The findings of the study showed that 80% of the participants were married; 10% widowed and 10% were single. Study findings from Ugwu, Erundu and Uneano (2011) yielded slightly different results with 72% married participants and 28% single. The study by Reingold (2015) in the USA indicated inconsistent results, with a broader spectrum of marital status. The study showed that married participants constituted 47.6%, 16.7% were living with partners, another 16.7% were divorced, and 19% were single. Rajan's (2014: 77) study yielded results that showed 43.75% married participants and 56.25% unmarried participants.

In the current study, the results showed that 40% of the participants were in Grade 1; 30% of participants were in Grade 2 and 30% were in Grade 3. Their years of work experience and salaries are as specified by the OSD. They were all registered with HPCSA, with 70% in the category diagnostic radiography, 30% in the other categories (Mammography and Ultrasonography). The researcher noted that the work experience in years could not be linked to the age structure but rather to the period of registration with the HPCSA in their particular job category in radiography. The Mammographers included in the study also performed general radiography.

From an educational point of view, the results indicated that 50% of participants had a National Diploma in Radiography, and 30% had a National Diploma and a Bachelor of Technology (20%). However within this percentage some participants had furthered their education in the different

modalities. Forty percent had a Bachelor of Technology degree and 20% certificates in Diagnostic Mammography. However other studies in the field of radiography have reported slight differences in findings. A Study by Ugwu, Erondy and Uneano (2011: 13) in south-eastern Nigeria showed that 10% had Masters in Technology degrees, 10% had National Diploma, and 80% had Bachelor degrees. Ugwu, Ahamfule and Nwobi,s (2008) study in in Nigeria showed that 100% of participants had a Bachelor's degree only.

5.3 WORK RELATED STRESSORS RADIOGRAPHERS

The results of the study showed that interpreting and or operationalising work related stressors in Radiography at a level 2 hospital in Gauteng depended on factors including:

- Family responsibilities;
- Social life;
- Loss of moral;
- Work load;
- Working under pressure;
- Shortage of staff;
- Shortage of consumables;
- Retention of staff;
- Teamwork; and
- Poor management skills.

In the current study, Radiographers were interviewed to provide their opinion regarding work related stressors. This study therefore described experiences of work related stressors as understood by the participants. The themes which emerged from the study are discussed below.

5.3.1 Personal well-being of Radiographers

When the participants were asked about their experiences of work related stressors, they had the same understanding of work related stressors but their

views on these differed. They associated work related stressors with a loss of purpose at work, general health and social life.

With regards to their sense of purpose at work the participants indicated that they were not able to perform their work according to the expectations of the organisation as there were constant problems. According to Van der Colff and Rothman (2009: 8), maintaining an understandable, orderly as well as consistent work environment was dependent on the strength of the organisation. Verrier and Harvey's (2010: 123) findings of a study on work related stressors on radiographers revealed that work related stressors were common among healthcare professionals; however, work stressors were not being managed well in radiography. The current study supports these findings by stating that the participants did not enjoy going to work as they felt that the problems they were faced with on a daily basis were not going to be attended to soon. The participants felt that there was no motivation in their work environment to drive them to an organisational purpose. According to the findings of the study which was conducted by Naqvi *et al.* (2013: 531) on job stress and employee productivity, the participants asserted that their work environment was not encouraging and neither did they have control over their work environment.

In relation to their general health, the participants asserted that work related stressors impacted on them, as they indicated that they had illnesses that were acquired from being overworked. Somewhat surprisingly, some participants in this current study did not see the urgency to attend to their health issues whereas others felt the opposite. The findings have shown that the clash of priorities between work and personal life of participants has resulted in them not being able to attend to their health concerns. Some participants indicated that they could not go to the wellness clinic due to overwhelming work commitments, in spite of their work related stress. According to Rothman (2003: 16), work related stressors such as feelings of uncertainty resulting from negative feelings, cause illness. According to Rajan (2014: 82), shift work has health risks as it produces symptoms similar to distress. This finding might be related to the current study findings as it

showed that the participants had similar discomfort, as they mentioned that they were sick and developed certain conditions because they worked hard. Some participants indicated that their general health was affected as a result of clashing priorities between work and personal health.

Some participants indicated that they wanted to consult at the wellness clinic in their work environment while some felt that there was no time to do so because of work commitments. However, they indicated that they required medical attention. The findings of the study which was conducted by Adesi, Kwado and Kab (2015: 4) revealed a similar concern regarding the health of staff. The study indicated that some of the participants showed conflicting knowledge of the existence of health and safety within their work environment. The study indicated that it was imperative for staff on post to have good health always. Similarly, a study by Adesi, Kwado and Kab (2015: 4) found that there was a clash in understanding of the existence of health and safety organisation in the workplace. Pennington (2013: 81) warned that health and wellness were necessary components of life in order to do any job at the most favourable level. In the current study the participants indicated that going to sit at the wellness clinic could mean leaving patients unattended. From this finding it can be ascertained that the participants had the patients' best interests at heart.

These findings revealed that participants were affected especially when one of their peers called in sick, because then the staff who were present at work had to carry the extra burden. They indicated that they could not take things slowly especially when one of them was absent. The researcher noticed that their responses sometimes seemed to be muddled indicating that their minds and bodies were responding to work related stress. A systematic review on reduction of work related psychological ill-health and sickness absence yielded similar results. The review indicated that most healthcare workers work in teams, therefore absenteeism due to ill-health increased work related stress for the staff (Michie and Williams 2003: 3).

The researcher noted that some participants felt the necessity to attend to their health. The results indicated that their thoughts about work were not positive. They indicated that thinking about work made them feel sick. These findings are consistent with the study by Cox, Griffiths and Rial-Gonzales (2000: 99), who stated that the experience of work related stress, is associated with changes in behavioural and psychosocial function. This study further added that such changes may be harmful to the employees' health. The current study revealed that some participants ended up being dependent on certain medication in order to function well. A recent study ascertained that any type of work related stress has symptoms such as an effect on a worker's body, change in mood and behaviour (Pennington 2013: 27). According to Fallon's (2013: 11) study, work related stressors experienced by health professionals resulted in workers being prone to illness because of the effects of stress on their immune systems. The results of the current study support the findings, as some of the participants indicated that they could not cope without taking medication.

In terms of social life, the study showed that participants felt that their families had taken a back seat as they could not interact normally when they arrived home after work since they just wanted to rest. These professionals are mothers, fathers and spouses with family responsibilities to attend to. As a result, they ended up not being able to cater for their own demands in and outside work because they indicated that they have insufficient time and energy to fulfil their personal commitments and that of their social lives. This had negatively affected their social lives because they could not maintain lifestyle, take family responsibilities, make time for individual hobbies, and attend to their commitments. According to Ugwu *et al* (2009: 6) health, performance in the work place, family and social networks are integrated.

The current study also showed that participants regarded themselves as not being able attend to their hobbies, do personal things, honour appointments, and have short holidays away. The participants indicated that they sometimes had to cancel set appointment because of work commitments. Chingarande and Ndlovu (2013: 237) revealed similar results stating that not having

enough time away (holidays/vacation) from work contributed to the work related stressors experienced by radiographers. Michie (2002: 69), Fallon (2013: 6) and Cox, Griffiths and Rial-Gonzales (2000: 90), discovered that the demand on the individual in the workplace is increasingly reaching into employees' homes and social lives, and therefore affecting family responsibilities and leisure activities. According to Rothman (2003: 16), the endeavour to fulfil work commitments can lead to the inability to attend to personal commitments. These findings are in line with the current study as the participants indicated that when they were at home they were still thinking about the challenges awaiting them in their work environment.

A review by MacManus (2007: 503) ascertained that because healthcare professionals also had lives outside of work, the work related stress and burnout they experience could not be accounted for solely by the work place but also by experiences outside of work. This is inconsistent with this study because participants indicated that they went home already stressed by work and usually returned to work with the same burden. The participants indicated that they accumulated stress from work and their responsibilities at home were impeded by the demands from work.

The current study found that it was difficult for most participants to make and honour social appointments because they always carried work stress with them. They indicated that it was not easy to just switch from 'work mode' to 'home mode'. These findings are similar to the findings by Raj (2006: 116) which described the spill over effect, which is an effect which occurs when stress at work interferes with personal life or vice versa. Ugwu, Erundu and Uneano (2011: 11) further corroborate the results of this study by stating that impairment of the capability to function normally can be as a result of either stress from work or from home.

5.3.2 Decline in quality patient care and radiography services

The participants described their experiences of work related stressors in relation to their work performance. In their perception, a decline in patient care and impairment of diagnostic radiography services resulted from various factors, including burnout and shortage of resources. According to Birkford (2005: 14), it is common among service professionals to have burnout as they sometimes attend to the emotional needs of others. This could lead to emotional and physical fatigue, where the professional ends up being unable to give care and attention to self. Raj (2006: 118) states that emotional exhaustion caused by work related stress can result in burnout. Almost all the participants in the current study indicated that they did not have enough time to rest as they had limited time off due to an overtime schedule that did not pay them on time. According to Michie (2002: 69), unpaid overtime causes work related stress. Further results in the current study showed that being relieved later than the normal change of duty time was an issue for the participants, while others mentioned that working with people's lives meant they could not leave the department unattended. Michie (2002: 69) stated that long and uncertain hours contributed to staff stress.

The findings in the current study show that the attitude and morale of staff was affected. Participants indicated that they were demoralised. They also indicated that most Radiographers felt that patient care was compromised because they were annoyed by having to work fast and not having time for small conversations with patients. Chang and Oswari's (2008: 161) study yielded similar results, stating that participants in that study had low morale that could be attributed to being overburdened and frustrated. Inconsistent with this study is the study by Ganster and Schaubroeck (1991: 245), which suggested taking note of the attitude that the workers bring to work.

According to Raj (2006: 116), work related stressors have a detrimental effect on patient care and employee morale. The current study findings revealed that some participants indicated that some patients cause work related stress because they do not appreciate the efforts made by the professional staff

treating them. The study findings also showed that participants' attitudes had been negatively impacted as they ended up being impolite to the patients when they should have been treating them with courtesy. These findings confirm findings from previous studies by Reingold (2015: 161), in which participants asserted that patients were abusive, and Rothman (2003:18) where the results indicated that gaining a sense of achievement is almost impossible when you are very tired and you may even end up being aggressive to the people you are helping.

The findings indicated that the married female participants were tired; as a result, they could not play with their children when they came home from work. These participants said that playing with children requires them to have some energy, as well as needing energy to tend to the needs of their spouses. These participants expressed a feeling of being worn out. They indicated that they could not do their work at home after hours. According to Ganster and Schaubroeck (1991: 265) women tend to have more non-work demands than men making them more vulnerable to the stress of their professional responsibilities.

The findings showed that the results indicated concern about having to work under pressure to attend to a large number of patients at short intervals. This increased the possibility of misdiagnosis. This participant was troubled by the probability of error which could have negative effects for both the Radiographer and the patient. The researcher noted that when the participants responded they associated the shortage of staff with the workload. The Radiographers mentioned that they were also working under pressure. Some mentioned that going to work was stressful as decades back they were not so inundated with work related stressors associated with their current work environment. According to Rothman (2003: 17), Fallon (2013: 6), and Kortum, Leka and Cox (2010: 235), the change in work environment due to different features of work related stressors results in the inability to keep up performance.

The availability of resources is necessary to provide a satisfactory level of service. The results of this study indicate that the participants experienced a lack of resources which meant substandard work results for the organisation. According to Ugwu, Ahamefule and Nwobi's (2008: 28), radiographers in their study reported that when materials in their departments were out of stock this prevented them from providing 'best patient care'. When the participants were asked about work related stressors, the researcher noticed various emotions when responding. The findings showed that the participants felt as though they might not be contributing enough at work. They said that these feelings led them to even contemplate leaving the organisation for better conditions elsewhere. The findings of the study conducted by Rajan (2014: 72) on stress among radiographers revealed that work related stress effects could cause staff to quit their job. The researcher further indicated that this could also result in a decrease in diagnostic quality and patient care services provided by the organisation. A study by Makanjee (2004: 124) yielded similar results which asserted that if an organisation lost experienced staff, the quality of service could be lost. The study suggested that it is imperative to retain staff.

The participants in the study were of the opinion that hiring more staff would help alleviate the work related stressors that they experience because of the shortage of Radiographers. The results showed that the strain caused by shortage of human resources was too intense for them to bear. Findings in Ugwu, Erundu and Uneano's (2011: 14) study showed similar results, where the respondents indicated that hiring more staff could be the best way to reduce work related stress among radiographers. The study found that the some participants indicated the challenge of the retention of staff in the profession within the public sector. The findings showed that Ultrasound Radiographers left the public sector as soon as they qualified, for reasons ranging from salary, to unavailability of Ultrasound Radiographer posts, to too much responsibility. The findings of the study conducted by Ugwu, Ahamefule and Nwobi (2008: 25) corroborated these results. Their study indicated that role extension into ultrasound practice was impacted upon by the extent of the human resources. The study added that this was weighing heavily on the few remaining radiographers, resulting in stress.

An increased workload also affected the Radiographers that were working within the different modalities in the radiography department. According to the results some Radiographers working in the mammography department had to cover the general radiography department as well, resulting in the mixing of skills, to allow continuity of service in the organisation. The findings by Field and Snaith (2013: 14) on development of radiographer roles indicated that this particular occurrence was not unique. Consistent with the current study was that radiographers were known to specialise in one modality, however they were also able to practice in a number of areas; this could help meet the service demands of the organisation. Findings inconsistent with the current study asserted that skill mix could benefit both the organisation and the staff in developing flexible, motivated, and skilful staff. The findings in this study indicated that it was very stressful for the Radiographers who worked in both areas.

Furthermore, the participants stated that the unavailability of resources meant they would not be able to provide a full service to the patients and it affected them negatively. They believed that management expected them to ensure that the department ran smoothly regardless of the shortage in resources such as staff, consumables and equipment. Participants revealed that not having enough equipment resulted in them having to push the mobile unit for long distances between wards. Rothman (2003: 17) also discovered similar findings that most employees have to improvise to deal with the consequences of limited resources and lack of control.

5.3.3 ENVIROMENTAL ENABLERS

These are factors that could enable a workable environment. The findings of the current study revealed that the participants believed in working together with management to achieve a smooth running of the organisation. The participants associated environmental enablers with management style as well as staff members' personal beliefs and suggestions. With regards to management style, the findings of the study showed that the participants were concerned about the inability of managers to relate to them as staff members

in relation to the functioning of the department. The findings further ascertained that participants were merely required to ensure the department ran smoothly even if they were faced with challenges within the work environment. According to Ugwu, Ahamefule and Nwobi (2008: 28), the attitude of management towards radiographers did not encourage them as it prevented the radiographers from providing the best patient care by using their own professional judgement. Participants perceived that management did not care about opinions of staff.

The findings showed that managers reacted quickly to issues if the staff got reported for misconduct. Michie's (2002: 69) study on causes and management of stress asserted that managers who are critical; demanding and bullying create stress whereas the nature of the work and good team work could reduce stress. The findings further indicated that even if the participants went an extra mile to do their job, management never came to thank them. They were of the opinion that the managers did not view them as part of the team. Rothman (2003: 21) emphasised that supervisors recognising the contribution of staff creates a motivating climate, encouraging them to look for innovative ways of doing things.

The findings yielded by the study show that participants did not have a proper channel for communication. They indicated that managers never came to ask how things are in the department; one of the participants even referred to them as "armchair managers". A study by Naqvi *et al.* (2013: 532) yielded similar results in that managers were the prime source of job stress for the employees in the public health sector. The study further ascertained that managers came up with non-viable decisions and were unsupportive in implementing them. Michie (2002: 67) pointed out that in fact employers were bound by law to ensure that employees do not become affected by work related stress.

Both categories of participant indicated that managers needed to take action to help alleviate stress. However, they recognised that they also have a part to play in improving their working conditions by working as a team. Van der

Colff and Rothman (2009:9) suggested that staff participation in decision making could give the employees a sense of belonging within the work environment. Therefore, the researcher noted that there was an apparent need to work together with the managers in order to have a mutual understanding regarding work related stressors.

In terms of staff members' personal beliefs and suggestions, the findings showed that this radiography department was in need of management intervention. A majority of the participants stated that they would prefer managers that were skilled and not ones that used management power alone, but were able to encourage them positively. The results revealed that participants felt managers should be able to solve problems. The findings of the study further revealed that the participants felt that managers were not making an effort to alleviate work related stressors. Chad and Oswari (2008: 167) indicated that managers should note that work related stressors are compromising their workforce.

Van Den Bossche and Houtman (2007: 73-87) discussed similar outcomes in detail, arising from their review on stress at work and how intervention measures should be undertaken to ensure that staff and managers are working in harmony and ensuring that staff wellness is constantly monitored. Additionally, Michie (2002:69) suggests that involving people in decisions, keeping them informed about what is happening in the organisation, and providing good services and recreation facilities could reduce stress among staff. These were in line with the findings of this current study in relation to SMI. Recommendations made by participants are follows:

- Take staff members seriously;
- Take into account staff members' suggestions;
- Avoid oppressing staff members;
- Appreciate staff members;
- Use a none-superiority rule;
- Pursue management training;
- Allow open communication;

- Organise sport activities for the staff;
- Screen and assess problems and prioritise level of importance;
- Provide workshops;
- Give time off – for example, a half day off work; and
- Adhere to organisational promises and deliver on them.

The Society of Radiographers (SoR) has published guidance and advice for the radiography workforce related to work related stress. This publication proposed that managers should work together with SoR Health and Safety representatives to ensure that HSE management standards are strongly applied within radiographers' work environments (Wigley 2013: 5).

The findings showed that staff held similar beliefs as to the ideal work environment that they envisaged. The findings also revealed that they felt managers could consult them and not set standards that were not feasible for them. The results showed that the participants were willing to put an effort into mending their organisation; however, they indicated that it could not be done on their own. Birkford (2005: 23) supports these findings by suggesting that for staff to manage work related stressors they have to merge both organisational and individual levels of stress management.

In the findings, the participants indicated their expectations from management, and described an enabling environment as one where management was approachable, caring, involved, helpful and understanding. The findings further revealed expectations such as the availability of protocols for after-hours radiography services. Rothman (2003: 21) indicated that a positive working environment is a fun working environment, with staff that has control over decision making and where there is recognition of relevant contributions that they can do their job well.

Noblet and LaMontagne (2006: 351) described stress prevention approaches, suggesting an empowerment approach in order to encourage staff members to identify their own needs. The study indicated that this was ideal for

improving the quality of health of staff members, therefore allowing the organisation to deal with other workplace stressors. The findings of the study appeared to support change in the way that staff worked. Participants also indicated that they would appreciate management support in implementing their own ideas of alleviation of work related stressors. In this regard, participants made the following suggestions:

- Teamwork;
- Cooperation and understanding among staff members;
- Consultation with staff members through having regular staff meetings.
- Inviting motivational speakers and priests for encouragement.
- Having picnics together as a team.

5.4 RESULTS IN RELATION TO THE AIM OF THE STUDY

The aim of the study was to explore work related stressors that affect Radiographers at a public hospital in Gauteng South Africa. The current study achieved this aim by describing the effects of work related stressors on the well-being of participants with regards to: lack of sense of purpose; general health social life; and, the decline in quality patient care and impairment of the radiography service as a result of burnout and shortage of resources. Ultimately the study described a workable environment for Radiographers based on the recommendations of the SoR on implementation of effective management and intervention for radiographers. The results in relation to research questions are discussed below. The participants responded to the following questions:

1. What are work related stressors that affect Radiographers in this public hospital? All participants described work related stressors as factors that disrupt an individual's family and personal commitments. The results showed that in terms of work related stressors affecting the participants, their personal well-being was impacted. The study found that their health was compromised by the clash between their work and personal health. In effect, they lost their sense of purpose at work. They need to make use of the wellness clinic within the hospital.

2. What are the experiences of the Radiographers who were affected by stress in their work environment? Participants described work related stressors according to their individual understanding and personal experience. The findings showed that the Radiographers in the study experienced similar work related stressors, such as shortage of staff and burnout. They were of the opinion that work related stressors negatively impacted the quality of their patient care and services to patients. In addition, the results showed that staff that leave and are not replaced cause an imbalance in the patient to staff ratio. Most of the participants felt that the increased workload resulted in them having to work under a lot of pressure. By management hiring more staff the majority of the work related stressors could be alleviated.
3. What are the perceptions of the Radiographers who were affected by stress with regard to their environment? The study found that the Radiographers interviewed work in an environment where there are no proper channels of communication between staff and management. There is no consultation, nor is there acknowledgement of staff by management. Most participants were of the opinion that management did not care about the issues of work related stressors affecting Radiographers in their work environment. Consequently, staff members end up being demotivated and demoralised as they see no action from management. The study found that the two categories needed intervention by management. The participants were in favour of teamwork and consultation in their work environment. They saw a need for communication by management to staff in order to share ideas and concerns.

5.5 SUMMARY OF THE CHAPTER

This chapter presented a discussion of the findings of the study. The demographic profile of the Radiographers interviewed in the study was described first. The findings in relation to the effects of work related stressors on Radiographers who have experienced the phenomena were also reviewed. The results were then explored concerning the environmental enablers and

outlining of interventional strategies. Chapter 6 will concentrate on the conclusion, limitations and recommendations for further research.

CHAPTER 6

CONCLUSION LIMITATIONS AND RECOMMENDATIONS OF THE STUDY

6.1 INTRODUCTION

This chapter summarises the findings, limitations and the recommendations of the study, and concludes with a summary. The study aimed to explore work related stressors experienced by Radiographers in order to describe them. The focus of this study has been based on research questions. The participants were asked to do the following:

- Describe work related stressors that affect Radiographers.
- Describe the experience of the work related stressors in their work environment.
- Describe the perceptions of the Radiographers who were affected by stress with regard to their environment.

6.2 SUMMARY OF THE FINDINGS

The findings in relation to the aim of the study were guided by the description of: personal well-being of the participants; decline in quality patient care and impaired radiography service; and, environmental enablers. A more detailed summary is presented in Table 4.2. Findings are discussed as themes and are summarised below.

6.2.1 Personal well-being of the participants

The well-being of participants in relation to work related stressors linked to the loss of sense of purpose at work as well as a negative impact on their general health and social life. Medical attention and counselling is necessary to avoid aggravating medical conditions already acquired from the work environment.

Adequate time off is also imperative in order to attend to family, hobbies and social commitments. This is necessary in maintaining a stable lifestyle.

6.2.2 Decline in patient care and radiography services

The decline in patient care and services emanates from a lack of positive attitude, low morale, and demoralised staff, as a result of unfavourable working conditions that the Radiographers are subjected to. Necessary changes should be made in order for patients to get the level of service that they expect from Radiographers.

6.2.3 Environmental enablers

Stress management intervention could assist Radiographers to achieve a balance within their work environment. Radiographers and managers need proper communication and interaction within the work environment to ensure that services run smooth. Both managers and staff need to recognise that working together can decrease the work related stressors in their work environment.

6.3 SUMMARY OF THE STUDY

The study described the various work related stressors as experienced by the Radiographers. Among the work related stressors were workload, shortage of staff, limited resources in terms of consumables and staff, and poor management. Moreover, unavailability of radiologists for reporting meant that the Radiographers could not provide the service for patients at certain times. This affected confidence in the work of those participants. According to the findings of the study these work related stressors resulted in exhausted staff, demotivated staff, as well below par service to patients leading to increased risk of misdiagnosis. However, regular meetings could assist Radiographers identify and partially deal with obstacles in relation to work related stressors. In addition, managers could regularly meet with staff to discuss change and disseminate relevant information. This could help limit misunderstanding within the work environment.

Notwithstanding the generality of the phenomena of stress in radiography as a profession, interventions can alleviate implications of work related stressors. The SoR Health and Safety representatives have prescribed approaches for SMI for work related stressors. Senior management and government are aware of the demand to hire more staff to improve the radiography service to patients.

Managers could improve their skills by attending management skills training as a means of enabling them to analyse work related stressors arising within their work environment. Requests for SMI for Radiographers should be considered. Initially there should be communication with immediate management. Involvement of top management is also necessary to show support for staff. Staff could also support each other by working as a team.

6.4 LIMITATIONS OF THE STUDY

Limitations are regarded as weaknesses of a study (Van Der Walt and Van Rensburg 2008: 118). According to Creswell (2003: 18) and Atieno (2009: 15), all methods have limitations and inherent biases.

Firstly, the participants were chosen from only one level 2 hospital, using purposive sampling. This setting had a large catchment area however some divisions in this radiography department had only a small number of participants e.g. the ultrasonography division, which influenced the sample size. It is typical in qualitative studies that data is collected from only a few individuals; however this could hinder the ability of the results to be generalised to the larger population of Radiographers.

Secondly, interviewer training, as this study was unable to ascertain the extent of illnesses that the participants were experiencing, although it did show that participants were ill due to work related stressors. In this case, the success of the interviews could be related to the skill of the interviewer in making decisions in the field (Barriball and While 1994: 330).

Thirdly, the amount of data collected was massive. On the other hand the researcher bares the responsibility of maintaining anonymity of the participants in relation to data. At the same time it is important to note that caution was necessary when interpreting the findings in relation to Radiographers, because a good qualitative research does not over express the study findings (Malterud 2001: 486).

Lastly, the researcher noted the inconsistencies shown in the discussion, which may have been due to the majority of researchers choosing quantitative methods in relation to radiography research. Furthermore, the researcher found that there was a limited volume of literature on work related stressors in radiography.

6.5 RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made regarding interventions in relation to management and staff:

- Hire more staff to compensate for the workload that both Radiographers have to deal with. In the first place, review the staff compliment now in comparison to previous years to ascertain the adjustments required to deal with the unreasonable patient load.
- Managers could go for management training in order to gain skills in assessing organisational issues. This is relevant to improve manager's methods of dealing with issues pertaining to the department.
- This study has determined that Radiographers' understandings of the effects of work related stressors and their consequences are the concepts of knowledge to their own lives and an opportunity to improve where possible.
- The key to the issue of "wellness clinic" to be used regularly lies in the amount of knowledge provided by the institution itself but the information provided needs to be supported by all Radiographers in order to tackle this issue of work related stressors.

- Staff should be informed about changes that involve them and be allowed to have input when necessary.
- Organise relevant workshops in order uplift the morale of staff.

The findings also made recommendations regarding interventions in relation to the staff:

- Have regular meetings to discuss issues that affect the work environment.
- Radiographers spend a majority of their time at work; therefore the work environment should also encourage an active lifestyle by means of organised sporting activities to maintain physical fitness.
- There needs to be a concerted effort by staff to help management alleviate the work related stressors within the organisation.
- Staff must also come up with strategies to support one another so as to promote a holistic work environment.

In relation to future research, the researcher makes the following recommendations:

- The researcher hopes that the results may encourage future research aimed at improving work related stress approaches that are in place therefore increasing the awareness of the HSE and other organisations concerned with the issue of work related stressors.
- Research is necessary in order to update existing literature so as to maintain healthier work environments.
- A similar study could be repeated in by means of focus groups to identify more information.
- There were some issues raised during the study that were directly aimed at management strategies in the institution, the researcher suggests further research that could investigate the views of managers with regards to work related stressors. The research could ascertain if they are divergent or maybe similar results.

6.6 CONCLUSION

As a crucial step towards a positive direction in work related stressors in radiography, the phenomenon should be controlled by means of sustainable SMI programmes to avoid its detrimental effects on the health of staff and the organisation. The Radiographers realised the complexity of work related stressors in their work environment. Therefore, it is only by working together with management that they can begin to address the problem.

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APPENDICES

Appendix 1: DUT Ethics clearance



Appendix 2a: Permission letter to the Gauteng Department of Health

Gauteng Department of Health
37 Pixley Ka Ixaka Sene Street
Marshalltown
Johannesburg, 2001

Dear Patience Ntamane

PERMISSION TO CONDUCT RESEARCH

I am currently registered for a Master of Health Sciences in Radiography at the Durban University of Technology (DUT). I would like to conduct a research towards the completion of my Master's degree at one of your facilities, a regional hospital. The proposed title of the study is: '*Work related stressors that affect Radiographers in a public hospital in Gauteng Province*'.

This will be a qualitative descriptive study. Subject to approval by the Durban University of Technology Ethics Board, semi-structured interviews will be employed to collect data from participants who are radiographers that have experienced stressors at the work place. The study will require a sample of about 1 to 20 willing participants who will share their experience during the interview. The interview process will take a month and all sessions will not last for more than 2hrs.

This study will be supervised by Prof M.N. Sibiya who is a HOD in Nursing at DUT and Ms P.B. Nkosi who is a Lecturer at the Department of Radiography at DUT. The results of the research will be reported in a research paper and will be made available to all participants on completion. The study will hopefully improve wellness among radiographers, improving their output at work and patient care. Management can also be encouraged to introduce interventional strategies to prevent work related stressors in future; therefore this study may benefit the institution greatly.

The institution will not experience any monetary gain/loss but will hopefully improve the radiographers' daily duties and maybe address issues that are not discussed easily.

A copy of the proposal is included as attachment. For any queries please do not hesitate to contact my supervisor Prof M.N. Sibiya at 031-373 2606. Her email address is nokuthulas@dut.ac.za.

Yours sincerely

.....
Ms L. Gumede (Master's student)
Email: lindiwe.gumede@gmail.com
Tel: 011-590 0221
Cell: 082 568 2035

Appendix 2b: Approval letter from NHRD Gauteng



GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

OUTCOME OF PROVINCIAL PROTOCOL REVIEW COMMITTEE (PPRC)

Researcher's Name (PI)	Ms Lindiwe Gumede
Organization / Institution	DUT
Research Title	Work related stressors that affects diagnostic and ultrasound radiographers in a public hospital in the Gauteng Province.
Contact number	Contact no: N/A Cell: 0825682035 Email: lindiwe.gumede@gmail.com
Protocol number	GP_2016RP42_741
Date submitted	27/11/2016
Date reviewed	18/01/2016
Outcome	Approved
Sites	Thelle Mogoerane

Your application to conduct the abovementioned trial has been reviewed by the Provincial Protocol Review Committee and permission has been granted to proceed.

We request that you submit a report after completion of your study and present your findings to the Gauteng Health Department.



Prof L. Baldwin-Ragaven
Chairperson: PHRC

Date: 2017/02/28



Dr. LRR Lebethe
DDG: Clinical Service

Date: 02/03/17

Appendix 3a: Permission letter to the CEO of the hospital

The Chief Executive Officer
Regional Hospital
Department of Health
Gauteng
South Africa

Dear Dr Mqhayi

PERMISSION TO CONDUCT THE STUDY

I am currently doing my Masters in Health Sciences with the Durban University of technology. As a partial fulfilment of the award of the degree, I am required to conduct a research study that I personally chose therefore, I request to conduct Data collection at your hospital's Radiology Department. I will also need permission to approach the staff wellness clinic in order to get assistance in identifying people that have experienced phenomenon.

The proposed title of the study is: *'Work related stressors that affect Radiographers in a public hospital in Gauteng Province'*.

The study will require all radiographers who are willing to participate during data collection. The data collection will last for a period of two months during August 2016 to September 2016. The study findings will help in determining the cause and effects of work related stress on Radiographers. I as the researcher will ensure that I adhere to all the guidelines of the institution.

I hope my application will reach your most favourable considerations. Please contact me should you have any questions with regards to my request. Please find attached a copy of the summary of the research proposal. Prof M.N. Sibiya is the supervisor for the study and may be contacted on 031-373 2606. Her email address is nokuthulas@dut.ac.za

Yours sincerely

.....
Ms L. Gumede (Master's student)
Email: lindiwe.gumede@gmail.com
Tel: 011-590 0221
Cell: 082 568 2035

Appendix 3b: Approval letter from the CEO of the hospital



GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

Thelle Mogoerane Regional Hospital

Enquiries: Dr N. Sibisi Zimu
Tel: (011) 590 0298; Cell: 0832707188
Email: Nelisiwe.Sibisi@gauteng.gov.za
13-01-2017

ATT: Research Co-ordinator

Re: Mrs Lindiwe Gumede

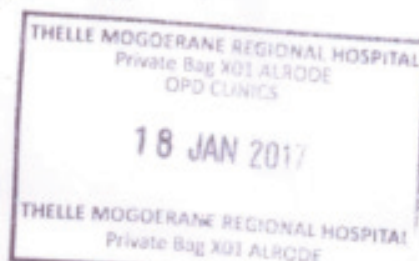
This serves to certify that Mrs Lindiwe Gumede has been granted permission to conduct her Research at Thelle Mogoerane Regional Hospital. Her research proposal and ethics checklist Were reviewed and supported.


I trust that this will assist you in supporting her with her research work.

Best regards



Dr. N. Sibisi Zimu
Clinical Manager.



Approved by:  Dr C. N. Mqhayi Mbambo(Acting CEO)

Date: 2017-01-18

Appendix 4: Letter of information



Thank you for agreeing to participate in the study.

Title of the Research Study: Work related stressors that affect radiographers in a public hospital in the Gauteng province.

Principal Investigator/s/researcher: Ms L. Gumede, MHSc: Radiography Candidate

Co-Investigator/s/supervisor/s: Professor M.N. Sibiya, D Tech: Nursing (Supervisor) and Ms P.B. Nkosi, M Tech: Radiography (Co-supervisor).

Brief Introduction and Purpose of the Study: Work related stressors have a negative effect on Radiographers. Their health and well-being is undoubtedly also adversely affected thus affecting their ability to perform their daily scope of work. This study will describe work related stressors affecting radiographers. I therefore require your participation in obtaining the necessary information towards the completion of a Master's in health Sciences degree.

Outline of the Procedures: Should you agree to take part in this study you will be required to sign the consent letter and will also therefore be required to answer a few interview questions regarding work related stressors in your own field of work. It is therefore important to respond truthfully and to the best of your knowledge. Once the interview is done the information will be analysed in order to ascertain and put together the results from all the interviews. If you would like to have access to the outcome of the interviews please send me your e-mail address.

Risks or Discomforts to the Participant: As far as I know there is no risk to you in sharing experiences. Participants will not be subjected to any invasive procedures. The study merely involves the sharing of information about the effects of work related stressors in

your daily work life as a radiographer. Some parts of the interview may be upsetting or may cause discomfort. You may opt to withdraw at any given time during the study.

Benefits: The results from this study may enable able employer to improve working conditions and communications within the department. Managers may also be encouraged to introduce interventions that may assist towards better working staff. This study will also be beneficial radiographers because it will help identify all potential hazards and come up with ways of managing them.

Reason/s why the Participant May Be Withdrawn from the Study: Participants will only be excluded from study if they have not agreed to sign the consent letter. Also they may be withdrawn if they choose to do so. Additionally should they decide to withdraw all their responses even after interview is complete they are entitled to do so.

Remuneration: There is no money to be received by any of the participants or the researcher.

Costs of the Study: There will be no cost to the participants.

Confidentiality: Confidentiality will be maintained at all times. Only people involved in the research such as the researcher, co researcher and supervisors will have access to the data. All participants will be assigned a special code to ensure anonymity throughout the research. You must rest assured with the knowledge that all information will be kept in a safe place and treated with the utmost confidentiality. Particulars will not be mentioned anywhere in the dissertation when the results of the study are published.

Research-related Injury: There is no unforeseen danger that may result from the interviews.

Persons to Contact in the Event of Any Problems or Queries:

Please contact I Lindiwe Gumede (0825682035), my Supervisor Professor Sibiyi (031 373-2606), my co- Supervisor Ms Nkosi (031 373-2509) or the Institutional Research Ethics ADRinistrator on 031 373 2900. Complaints can be reported to the Director: Research and Postgraduate Support, Prof S Moyo on 031 373 2577 or moyos@dut.ac.za

Appendix 5: Consent form



Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Ms L Gumede, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: REC 126/16.
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature/Right Thumbprint

I, Lindiwe Gumede (name of researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

L. Gumede

Full Name of Researcher

Date

Signature

Full Name of Witness (If applicable) Date

Signature

Full Name of Legal Guardian (If applicable) Date

Signature

Appendix 6: Interview guide

Participant Code:



Date of interview:

Section A: Demographic Data

1. Gender
2. Age
3. Marital status
4. Job grade
5. Job category
6. Qualification

Main research question

- What are work related stressors that affect radiographers in a public hospital in Gauteng province?

Sub-questions

- What are the experiences of the radiographers who were affected by stress in their work environment?
- What are the perceptions of the radiographers who were affected by stress with regard to their environment?

Probing questions

1. Has work related stress affected your work-life balance? Please explain further.
2. Please explain why it is harder to achieve work-life balance?
3. Describe the difficulties of dealing with work related stress in detail.
4. What are your feelings regarding management actions on work related stress?
5. What management actions can help reduce stress?
6. Other than management actions, are there any other solutions to address work related stress in your environment?

Appendix 7: Sample of the interview transcript

Participant Code:

P5

Date of interview: ...19/02/2017.....

Section A: Demographic Data

Data not shown due to ethical reasons.

Section B: Interview

Interviewer: Greeted participant and introduced self as well as explaining the purpose of the interview.

Interviewer: May I begin with the interview?

Interviewee: Yes Please.

Main research question

Interviewer: What are work related stressors that affect radiographers in this public hospital?

Interviewee: Mmm this hospital has been in existence for about two years but then those two years seems like ages. Here we are being overworked far more than what we used to have in the old regional hospital. So whenever one comes to work, you find the corridor full especially and it demoralises you so it is very stressful.

Interviewer: So mainly it is the workload that you are concerned about?

Interviewee: Not the workload as such but the type of examinations that are requested by the doctors here. We are supposed to having Primary Health Care with clinics around this area. (The part of Ekurhuleni where

we are) , but you find that every patient that goes to one of these clinics for Primary healthcare are all referred to the regional hospital.

Interviewer: So it increases your workload?

Interviewee: yes it increases the workload and even within the premises of this hospital, the Doctors here I can say about sixty percent of the work that they send for x-rays are not supposed to be doing x-rays, so there is this thing of Medico legal issues, Now the Doctors will request just anything, where the patient complains about the pain, just to cover themselves in case it's a Medico Legal Issue

Interviewer: So now has work related stress affected your work life balance? With you coming in to a corridor full of patients does it anyway affect your work life balance?

Interviewee: It does because eeehh you know when you get to your place of work, actually we spend most of our time in the work environment.

Interviewer: Yes it's true.

Interviewee: So once you get this corridor full of patients it's difficult for you to be open, you know? To do your work the way you are supposed to because even the patients will be mourning –"I've been here for so many hours" and find that there is nothing wrong with that one but then for Doctors here. Especially when the year starts because we have these Interns, they are requesting textbook material.

Interviewer: So true. So with your experiences, how difficult is it to achieve this work life balance, we are concentrating on what is happening at work but what I mean by work life balance is basically when you go out of work You are finished with those patients that are full in the corridor, So when you go out of work you are normal, Nothing is abnormal with you? You just leave everything behind?

Interviewee: eeeh I can't say it's normal once I leave my place of work because after knocking off , along the way driving you feel that NO maan how I wish I wouldn't be going to work the following day...So it does affect . It's difficult you know, you just don't forget about work, eeh everything that you have done in the department it goes with you but being a radiographer, health worker whatever stress one has you just have to soldier on and do the patients.

Interviewer: So in your own perception, how difficult is it to achieve work life balance? Basically, how do you cope? How do you make it easy for yourself?

Interviewee: Aaah now what one does is, as I said I'm a radiographer, I'm a health worker. It is my obligation I have to do this for the sake of the patients and the smooth running of the department. Even if I'm stressed and what... but I do make it a point that my work is done.

Interviewer: It's true. So describe the difficulties of dealing with work related stress in detail. Now the difficulties that you meet along the way, whilst you are trying to deal with this stress.

Interviewee: The biggest problem I think is communication by the 'Powers that be'.

Interviewer: By the 'Powers that be' that is you mean?

Interviewee: Management.

Interviewer: Ok

Interviewee: our management in my department and the hospital management at large. Like in my department, you know.... Communicating with people on a regular basis, discussing work related problems such as when to do special examinations, is this really necessary to be done after hours without the radiologist. eehhh

radiologists have to cover themselves . We have a radiologist on call but that person will never be here especially at night but they will leave a message that such and such a thing when a doctor requests this thing it must be done like this. Now doing that it adds something again on your stress because the very doctor who requested, after you have done the same examination asks you the radiographer "Do you see anything abnormal?" It's what also makes one you know angry. Because truly speaking if there is a radiologist on call whenever there is such an examination comes to the department s/he must be here.

Interviewer: So what are your feelings regarding management actions on work related stress as you have already mentioned that the managers are part of the stress that is exerted on the staff so what are your feelings regarding their actions.

Interviewee: it demoralises one, because knowing that someone is getting paid for being on call and that person is never here. They will talk to the requesting doctor send him and tell them that I said they must do this, doing that in the comfort of his or her home. Yet you've got patients to do here, you have to do this thing, this special exam which will be reported the following day by the radiologist who was on call the previous night. It makes one really angry because that person is getting paid for that.

Interviewer: So other than that on management, is management doing enough on other sectors or other parts of the department? Everything else is running smooth?

Interviewee: Eeeh like I said communication is lacking in the department , with our immediate management within the department , You know I would prefer that maybe if hold weekly meetings .say 30minutes or so every Monday or Friday, discuss issues here, it can eliminate some of the difficulties that we have to endure during working after hours even during the day . So if Management could communicate with the

radiographers I'm sure it can eliminate a lot of difficulties but that is lacking like I said, you know you will get a notice ukuthi (to) somewhere this and this has to be done, do this and what ...without communicating with everyone. So that one will also makes management less communicative, creating more problems for us.

Interviewer: So by saying that what management actions can help reduce stress, I think maybe on that point that you already highlighted. What can they do to make things better for their staff, to make everyone comfortable, maybe make everyone less stressful?

Interviewee: Ok number one is what I have already said communication, secondly if our management, Top management can also interact on some of the issues that affect us radiographers.

Interviewer: Such as?

Interviewee: The work related volume of patients that are there but really were not supposed to have come to the x-ray department in the first place and in our institution there is something that I don't like, in my 30 years odd that I've worked in the public sector, after hours at night we have so called Night Superintendents and those are just ordinary Sisters who is maybe a Matron who will come when there are problems like problematic patients especially escorts who feel that no the flow of patients is slow and they don't understand if... why do you take 10 minutes I mean less than 5 minute minutes or less than 5 on patient so and so but this one you have taken something like 15 to 20 minutes , they don't understand that . Whilst they feel eeh mostly like I said these are escorts they will go to this so called Night Supers, the Superintendent will come "I understand that you eehh you are eeehh a very slow and people are complaining, why is it that you are slow" and you ask them, tell me you are here because people came to you complaining that the radiographers are slow? So you are here you have come to solve the problem? So did these people tell you why I spent so

many minutes on that patient? And more than 10 minutes on this one, so did they tell you? Or do you know? Are you gonna solve this problem? What must I do? ... Now you find out that this person doesn't even know what an angiogram is. It's things like that.

Interviewer: So they don't even understand that there are different exams within this department?

Interviewee: They don't understand that. They don't understand that. Theirs is just to make sure that they've got a report the following day they have to give to their Matrons "This is what transpired in the x-ray department". Like I said for the 30 odd years that I have worked here, for the first time in my life last year I had to feel in a complains form that is supposed to take me to top management meaning that I am not I am not doing my work, I refused to do a portable in casualty and this is what they wrote there. When I talked to my supervisor she was also shocked, "You did this patient?" and I told her yes I've done this patient. Did any casualty Dr come to you complaining that eeehhh their patients were not done? And she said No, she it's the report that I got from the Matrons. So now this Night Super thing instead of solving and maybe alleviating some of the problems that we have is also aggravating the circumstances on night duty because of that Night Super who doesn't know anything because asking her you've come to solve other solutions to address this please tell me how do I solve it, the person doesn't know what an angiogram is but she is here to solve the problem.

Interviewer: That was a mouthful ... So other than management actions are there any other solutions to address work related stress in your environment maybe besides thinking about the Night Supers. In your own environment, what can be done that can alleviate this stress?

Interviewer: eeeh Lady, you know if we can have enough staff like after hour's issues of theatre, issues of mobile units - in the wards and casualty .If we can have enough staff it would go a long way in reducing

our stress level. Top management, Armchair Leadership, Armchair management, Up there, they are not conversant with what is going on in the department but but they are the ones who want 1, 2, 3 to be implemented without ehhe having to come to the department and ask especially not the supervisor the radiographers, so that each and every radiographer can voice his or her eeeh opinion on work related stressful procedures that we have to encounter in the workplace. That would help them, that's all it is. But like I said its armchair management also adds to this, if that can also be looked into we can solve a lot of problems.

Interviewer: That is the end of questions that I set out for the interview. Is there anything that you feel you need to tell me or I needed to ask maybe to elicit more information from you or you are satisfied with the questions or any information that you still have for me to tell you about the stress?

Interviewee: All I can say is when our government , National government introduced this Primary Health care idea in my opinion this should have led to surely a speedy and qualitative production in the department but now around the Ekurhuleni area – the area that we serve I can count more than 5 clinics that are supposed to work 24hours but clearly it's those clinics who after hours they all send these patients to the main hospital, if that can be implemented as it was the intention of the health department nationally then this could have gone a long way but unfortunately the Primary health care system isn't working.

Interviewer: So does that mean they must go back to the drawing board?

Interviewee: Back to the drawing board , assess the input that maybe you and others are in your research can give them, maybe they will look into that , will have less ambulances after hours that would come in here because at any given time between the hours of 8pm till 4am in casualty , emergency casualty , you won't find less than 3 ambulances throughout the night , through out that period that I'm telling you about and the patient in there when it comes out just an ordinary cough ,

something that the primary health care staff in our Primary health care staff in our clinics could have managed to do without even letting the department incur more financial burdens because ambulances transporting these patients to the hospital also decrease the budget somewhere within that system that was supposed to have been in place , that's why I'm saying if maybe people like you as you are doing the research if some such things could be forwarded to the people who had this primary healthcare vision if they can get input I'm sure they would save a lot of money ,that's point number one , two –it would alleviate patient's inconvenient by you know having a patient just a ordinary cough with a patient who has been involved in a car accident.

Interviewer: Yes you can't compare the two.

Interviewer: thank you for your time and your answers that you gave me. It was very helpful and you will let me know if you want to see the results of the research if you have got an email address I will e mail it to you if you need a hard copy I can also make one for you.

Appendix 8: Certificate from a professional editor

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**Master's dissertation: WORK RELATED STRESSORS THAT AFFECT DIAGNOSTIC
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GAUTENG PROVINCE**

I confirm that I have edited this dissertation and the references for clarity, language and layout. I am a freelance editor specialising in proofreading and editing academic documents. My original tertiary degree which I obtained at the University of Cape Town was a B.A. with English as a major and I went on to complete an H.D.E. (P.G.) Sec. with English as my teaching subject. I obtained a distinction for my M.Tech. dissertation in the Department of Homeopathy at Technikon Natal in 1999 (now the Durban University of Technology). During my 13 years as a part-time lecturer in the Department of Homoeopathy at the Durban University of Technology I supervised numerous Master's degree dissertations.

Dr Richard Steele

13 May 2017

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