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THE RELATIONSHIP BETWEEN OCCUPATIONAL STRESS AND LOCUS OF CONTROL AMONG NURSES

by

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The objective of this study was to explore the relationship between occupational stress and locus of control, to analyse and investigate the nature of nurses' work and to determine the sources of stress and how they influence the nurses' work environment and personal lives. The Work and Life Circumstances Questionnaire (WLQ) and Rotter's 23-item scale were applied in a probability, simple random sample consisting of 302 South African nursing students and nurses currently employed in the private and public healthcare sector.

Significant relationships were observed between the variables. Supporting evidence indicates that there is a negative correlation between occupational stress and locus of control. The results further indicate significant differences among the different locus of control orientations and the participants perceived level of stress; as well as a difference in the correlations between occupational stress and demographics such as marital status, working time and occupational level. Finally, the researcher was able to determine which stressors cause the highest level of stress among the participants. The findings should contribute valuable new information to the employee well-being literature and human resource management practices relating to employee assistance programmes, employee well-being and the retention of staff, especially in the healthcare sector.

KEYWORDS: Attribution theory; biopsychological model of stress; external locus of control (external); internal locus of control (internal); locus of control; nurses; nurses' work environment; occupational stress; person-environment fit model, social learning theory.

SCIENTIFIC OVERVIEW OF THE RESEARCH

This dissertation focuses on the relationship between occupational stress and locus of control. In this chapter, the background and motivation for the research are discussed. From this, the problem statement, research questions and research aims and objectives are formulated. A discussion of the research design and the research methods, with reference to the various steps in the research process, will follow. Finally, the chapter layout is provided.

1.1 BACKGROUND AND MOTIVATION FOR THE RESEARCH

The focal point of this research is an investigation of the relationship dynamics between occupational stress and locus of control. The context of this study is the perceived level of stress as experienced by nursing staff in the South African context. The aforementioned context is important in this study, as research has shown that occupational stress causes employees to leave the organisation due to ill-health and dissatisfaction (Greenhaus, Callanan & Godshalh, 2000; Mostert, Rothmann, Mostert & Nell, 2008). Moreover, one's locus of control orientation is concerned with the role of expectancy for control in one's reaction to stress (Wolk & Bloom, 1978).

Occupational stress is viewed as a dynamic transactional process (Watson, Goh & Sawang, 2011), which causes the individual to experience feelings and emotions that are negative and reactions that accompany threatening or challenging situations. According to Osborn, Wraa and Watson (2009), *stress* is a universal phenomenon that is considered to be a condition in which people respond psychologically, physiologically and socially to life changes. These changes might be thought of as relationship-related experiences, responses and outcomes caused by different incidents and circumstances, which are experienced differently by different people. Keeping in mind that not all stress reactions are negative, the term *stress* is also used to describe a variety of feelings and reactions that accompany actual and perceived threatening or challenging situations (Osborn, *et al.*, 2009). A certain amount of stress is thus essential for continued existence and can enhance optimal performance levels, but when the threat or situation exceeds the individual's coping mechanism, he/she experiences distress.

Occupational stress has therefore been recognised as a major concern for employees, as it takes its toll on the psychological and physiological well-being of the individual (Greenhaus, *et al.*; 2000). Occupational stress could as a result lead to negative consequences such as depression, burnout, psychosomatic illnesses and job dissatisfaction (Greenhaus, *et al.*, 2000). Occupational stress researchers have become increasingly interested in the role of generalised control beliefs (also known as locus of control) in individuals.

According to Osborn *et al.* (2009), traditionally, stress research was orientated towards research which involved the body's response to stress (biophysiological perspective) and the cognitive processes and transactional processes that appraise the event, interaction or situation as a stressor. However, current perspectives on the research response have noted that people who experience similar life conditions are not necessarily affected in the same manner. Therefore, according to Rodriguez, Bravo, Peiro and Schaufeli (2001), it is important to include locus of control in occupational stress research, because it predicts how a person will cope with stress.

The construct *locus of control* was developed by Julian B. Rotter in 1954 and measures an individual's expectancy of either the need for internal or external control of reinforcement (Chen & Silverthorne, 2008). Individuals who believe that they have strong control over what they accomplish, because of their personal behaviour and competencies, are referred to as having an internal locus of control (De Mooij, 2010); whereas individuals whose behaviour is reinforced by expectancies (that their accomplishments are ruled by luck, fate, other people and circumstances) have an external locus of control (Bergh & Theron, 2007). Research indicates that externals are therefore prone to less favourable outcomes.

Several studies have been conducted to determine the effect of one's locus of control orientation on various job characteristics such as stress (Chen & Silverthorne, 2008). These studies found that individuals with an internal locus of control perceived lower levels of job stress, but reported higher levels of job satisfaction and performance; whereas individuals with an external locus of control are more likely to refrain from certain actions, because they believe that changing the situation is beyond their ability.

Extensive research has been undertaken on occupational stress among nursing in the past two decades and it is still a growing area of research. Literature on this topic indicates that there is still an interest in the nursing profession (Evans, Pereira & Parker, 2008). Occupational stress in the healthcare profession is furthermore a major concern in the

healthcare industry, because nursing is considered inherently stressful and demanding. Although there is a large amount of literature available on occupational stress among nurses; researchers have failed to determine whether their locus of control orientation affects their perceived stress. Hughes (2008) conducted a research study to determine whether a nurse's personality type affects the perceived level of stress and burnout. The study found that nurses with an external locus of control experiences higher levels of stress and burnout than nurses with an internal locus of control. Based on the limited literature available on the relationship between occupational stress and locus of control among nurses, the researcher took upon it to investigate the relationship.

Nurses generally work in hospitals, where they spend a substantial amount of time walking, bending, stretching and standing (Mangaoang, 2011). Patients in a hospital environment require 24-hour care; therefore nurses are required to work nights, weekends and on public holidays. The geographical distribution of nurses in South Africa furthermore indicates that there is a shortage of qualified nurses. According to the statistics released by the South African Nursing Council in 2010 (SANC, 2010b), in a population of 49 991 300, one nurse is responsible for 216 patients.

Nurses are trained to deal with difficult and challenging tasks (Kane, 2009); but occupational stress takes its toll when the nurses' do not have the necessary skills, competence and knowledge to deal with the pressures of the work environment, the doctors, patients and their families. Therefore, potential nurses have to enter an extensive training programme, which allows them to provide quality care to their patients.

It is therefore important to identify the extent and causes of stress in a health care environment in order to assist the nurse and the organisation in preventing these negative influences. Various nursing stressors have been identified in previous research studies, which include stressors associated with workload, death and dying, inadequate preparation, lack of staff support and conflict with doctors, other nurses and supervisors, poor family dynamics at home, the reality of practice for graduate nurses, meeting patients' needs and self-expectations, patient suffering, absence of response, repetitive problems, time pressures and constantly being pulled in different directions (Evans *et al.*, 2008). Because nursing is widely perceived to be one of the most inherently stressful occupations (Kirkcaldy & Martin, 2000), nurses and the organisation often experience increases in absenteeism, decreased productivity and a high turnover. These also affect the employee's health and quality of life (Gellis, 2002).

Following from the background, the following hypotheses are proposed and will be tested empirically in this research:

Hypothesis 1:

- H₁: A nurse with an internal locus of control will experience higher stress levels than a nurse with an external locus of control.
- H₀: A nurse with an internal locus of control will not experience higher stress levels than a nurse with an external locus of control.

Hypothesis 2:

- H₂: A nurse with an external locus of control will experience higher stress levels than a nurse with an internal locus of control.
- H₀: A nurse with an external locus of control will not experience higher stress levels than a nurse with an internal locus of control.

Hypothesis 3:

- H₃: Locus of control will determine the stress level of a nurse.
- H₀: Locus of control will not determine the stress levels of a nurse.

In summary, by taking all of the above considerations into account, this research study will focus on the relationship between occupational stress and locus of control among nurses.

1.2 PROBLEM STATEMENT

Occupational stress seems to be a significant area of research in human resource management and industrial psychology, as it has a severe impact not only on the individual's health and safety, but also on the effectiveness of the organisation. Various stressors in and outside the organisation, as well as the individual's locus of control orientation, might have an impact on his/her perceived level of stress. Therefore, the problem to solve in this research study is two-fold, namely (1) to determine whether one's locus of control orientation has an impact on one's perceived level of stress, and (2) to determine how one's locus of control orientation and other stressors, in and outside the organisation, influence the individual and his/her work environment.

In the light of the aforementioned problem, several research questions that have relevance for the literature review are posed:

- How are the concepts *occupational stress* and *locus of control* conceptualised in the literature; and what is the theoretical relationship between occupational stress and locus of control?
- To what extent is a nurse's work environment stressful and what stressors influence the employee's health and well-being, and the organisation?
- The perceived level of stress among individuals may differ due to the industry in which they are employed, therefore, according to the current literature available, what is the nature of a nurse's work environment?
- Which stressors cause the nurse to experience the highest level of stress and what are the consequences thereof?

The following research questions are of relevance to the empirical research study:

- Is there a relationship between occupational stress and locus of control among the participants?
- Which stressors cause the highest level of stress among the sample?
- Which locus of control orientation causes the highest level of stress among the sample?
- Based on the results, is there a correlation between occupational stress and demographics such as marital status, working time and occupational level?

Based on the problem statement and research questions, the following aims and objectives of the research study can be determined.

1.3 AIMS AND OBJECTIVES OF THE RESEARCH

Given the above research problems, the following general and specific aims have been formulated.

1.3.1 General aim

The general aim of this research is to critically explore, analyse and evaluate the relationship between occupational stress and locus of control in nurses.

1.3.2 Specific aims

The specific aims of the literature review and empirical study are formulated and discussed in the next section.

Literature review

In terms of the literature review, the specific aims and objectives are as follows:

Research objective 1: determine whether there is a relationship between occupational stress and locus of control from a theoretical perspective.

Research objective 2: analyse and investigate the nature of nurses' work; and to determine whether nurses with an internal or external locus of control experience higher levels of occupational stress.

Empirical study

The specific aims for the empirical study are as follows:

Research objective 1: to determine whether there is a relationship between occupational stress and locus of control among nursing students and nurses, currently studying at the University of Pretoria and in the employment of private and public healthcare facilities respectively.

Research objective 2: determine which stressors cause the highest level of stress among the sample.

Research objective 3: determine whether externals (nurses with an external locus of control) or internals (nurses with an internal locus of control) experience greater levels of occupational stress.

Research objective 4: determine whether there is a relationship between occupational stress and demographics such as marital status, working time and occupational level.

1.4 STATEMENT OF SIGNIFICANCE

The objective of this study is to determine the relationship between occupational stress, as measured by the Work and Life Circumstances Questionnaire (WLQ), and locus of control, as measured by Rotter's 23-item scale. A sample of 300 nurses and nursing students, studying at the University of Pretoria, was chosen for the study. Another objective was to determine how stress is perceived by nurses who have different locus of control orientations. The researcher also wants to determine which stressors cause the most problems in the nurses' work environment and establish the consequences thereof.

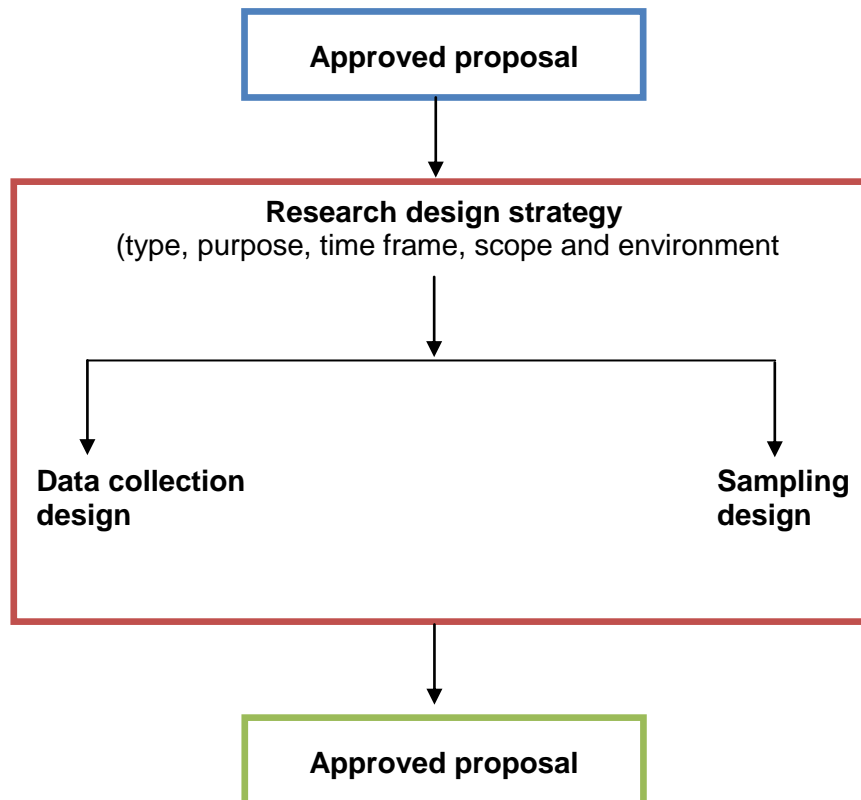
1.5 RESEARCH DESIGN

The purpose of research design is to identify and develop procedures and logistical arrangements required to undertake a study to emphasise the importance of quality in the procedures to ensure that they are valid, objective and accurate (Kumar, 2005). Cooper and Schindler (2008) further state that *research design* is the blueprint for fulfilling research objectives and answering questions. This process is illustrated in Figure 1.1.

The intention of this section is thus to determine the statistical approach that will be used to examine the relationship between occupational stress and locus of control, as obtained from a sample of respondents currently working at a private or public healthcare facility, and nursing students studying at the University of Pretoria. A descriptive research approach will be used; more specifically, a survey research design will be used to accomplish the research objectives.

A survey research design will be applied, because (1) it is relatively inexpensive, (2) it is particularly useful when one describes the characteristics of a large population, (3) it can be administered from remote locations, by making use of mail, electronic mail and telephones, (4) very large samples are feasible, making the results statistically significant even when analysing numerous variables, (5) a variety of questions can be asked about a certain topic, (6) standardised questions make measurement more exact by enforcing consistent definitions upon the participants, and (7) standardisation ensures that similar data can be collected from groups then interpreted comparatively (Colorado State University, 2011). By presenting the participants with a standardised questionnaire, subjectivity will be eliminated which in turn will result in a high reliability score.

Figure 1.1: The research design process



Source: Cooper and Schindler (2008)

The research hypothesis is furthermore formulated on the relationship between the level of occupational stress and the locus of control orientation. Descriptive and inferential statistics will be used to test the hypothesis.

The research design will be discussed with reference to the type of research conducted, followed by a discussion of validity and reliability.

1.5.1 Descriptive research

According to Burns and Grove (2003:27), “descriptive research is the exploration and description of phenomena in real-life situations; and provides an accurate account of characteristics of particular individuals, situations, or groups”. By implementing descriptive research, researchers can discover new meanings, describe what currently exists, determine the frequency with which a phenomenon occurs, and categorise the information. The outcome of descriptive research is the description of concepts, identification of relationships

and development of hypotheses, which provide a basis for future quantitative research (Burns & Grove, 2003).

Singh and Nath (2007), furthermore, state that the objectives of descriptive research are:

1. to identify the present conditions and point to present needs;
2. to study the immediate status of the phenomenon;
3. to find facts; and
4. to examine the relationship of traits and characteristics.

This research study is descriptive in that it (1) describes real-life phenomena, (2) it describes the characteristics of a particular individual, (3) its aim is to find new meanings and describes what exists, (4) it determines the frequency with which something occurs, (5) categorises information and (6) it identifies relationships by developing hypotheses. Descriptive research will accordingly be applied to determine whether there is a relationship between occupational stress and locus of control.

The research design thus fulfils the requirements for this type of research, as outlined above.

1.5.2 Validity

Validity is an important key to effective research; if a research study is invalid then it is worthless. According to Babbie (2010:153) *validity* is a term used to describe “a measure that accurately reflects the concept it is intended to measure”. Validity has two separate but related dimensions, namely (1) internal and (2) external validity.

Research studies need to be both internally and externally valid. According to Cohen, Manion and Morrison (2007:135), *internal validity* seeks to “demonstrate that the explanation of a particular event, issue or set of data which a piece of research provides, can actually be sustained by the data”. In other words, the findings must describe the phenomena being researched accurately. Schwab (1999) further states that internal validity is present when variations in the independent variable’s scores are responsible for the variation in the scores of the dependant variable. Therefore, the following criteria should be present: (1) the independent and dependent variables are meaningfully related, (2) variation in the independent variable is contemporaneous with, or precedes, variation in the dependable variable, and (3) there is a reasonable causal explanation for the observed relationship and there are no plausible alternative explanations for it. Therefore, the question that should be

asked is: “Do the observed changes in the dependent variable actually relate to changes in the independent variable?”

External validity is concerned with the question: “do the results obtained from this particular sample of participants apply to all subjects in the populations being studied?” *External validity* therefore examines the extent to which the results of the study can be generalised (Bless, Higson-Smith & Kagee, 2006). The researcher must therefore consider two factors in order to ensure that the study achieves high external validity, namely (1) the sample must represent the population which is being studied, and (2) the researcher must ensure that the study simulates reality as closely as possible. This means that the circumstances and conditions must be regarded as normal.

Validity in the literature review:

Validity will be ensured throughout this research by consulting literature that relates to the problems, characteristics and objectives of the research study. Literature on the topic reveals certain constructs, models concepts and theories that form part of the concepts of *occupational stress* and *locus of control*. These constructs and concepts will furthermore be structured in an organised and logical manner. The researcher will attempt to use the most current literature sources, but will also consult a number of prior and existing conventional research sources because of their significance to the constructs being studied.

Validity in the empirical study

The validity of the empirical study will be ensured by means of appropriate and standardised measuring instruments (questionnaire). The measuring instruments will be chosen according to their criterion, content and construct validity.

1.5.3 Reliability

The reliability of the research design is ensured by preparing and conducting the research process in such a manner as to avoid inconsistencies. The reliability of the literature is assured when other academics have the right to use and access the literature sources and theoretical views in the study.

The reliability of the study is ensured by obtaining participation from a truly representative sample. In this study, measuring instruments will be used whose reliability has been confirmed in previous research.

1.5.4 Unit of analysis

The *unit of analysis* is the person or object from whom the researcher collects data (Bless *et al.*, 2006). In this research study, the unit of analysis was individuals, namely nurses. Bless *et al.* (2006) state that individuals are the most common unit of analysis, because the researcher investigates the circumstances, orientations or behaviour of a group of individual people. In this research study, the researcher will focus on the conditions, orientations and actions of the group of individuals, as well as the relationship between occupational stress and locus of control among the individuals.

1.5.5 Variables

The research study is interested in measuring one independent variable in relation to a dependent variable. According to Bless *et al.* (2006:27), an “independent variable is that factor which is measured, manipulated or selected by the researcher to determine its relationship to an observed phenomenon which constitutes the dependent variable”. In contrast, the *dependent variable* is defined as that factor which is observed and measured to determine the effect of it on the independent variable; that is, the factor that appears, disappears, diminishes or amplifies (Bless *et al.*, 2006). In this research study, the independent variable is occupational stress and the dependent variable is locus of control. In summary, the researcher wants to determine how one’s locus of control orientation affects the level of stress experienced.

In order to determine the impact or influence of the dependent variable on the independent variable, data will be collected on both the independent and dependent variables by means of measuring instruments chosen for the underlying principle of this study.

1.6 RESEARCH METHOD

As illustrated in Figure 1.1, the research method consists of a literature review and an empirical study.

1.6.1 Research Phase 1: Literature review

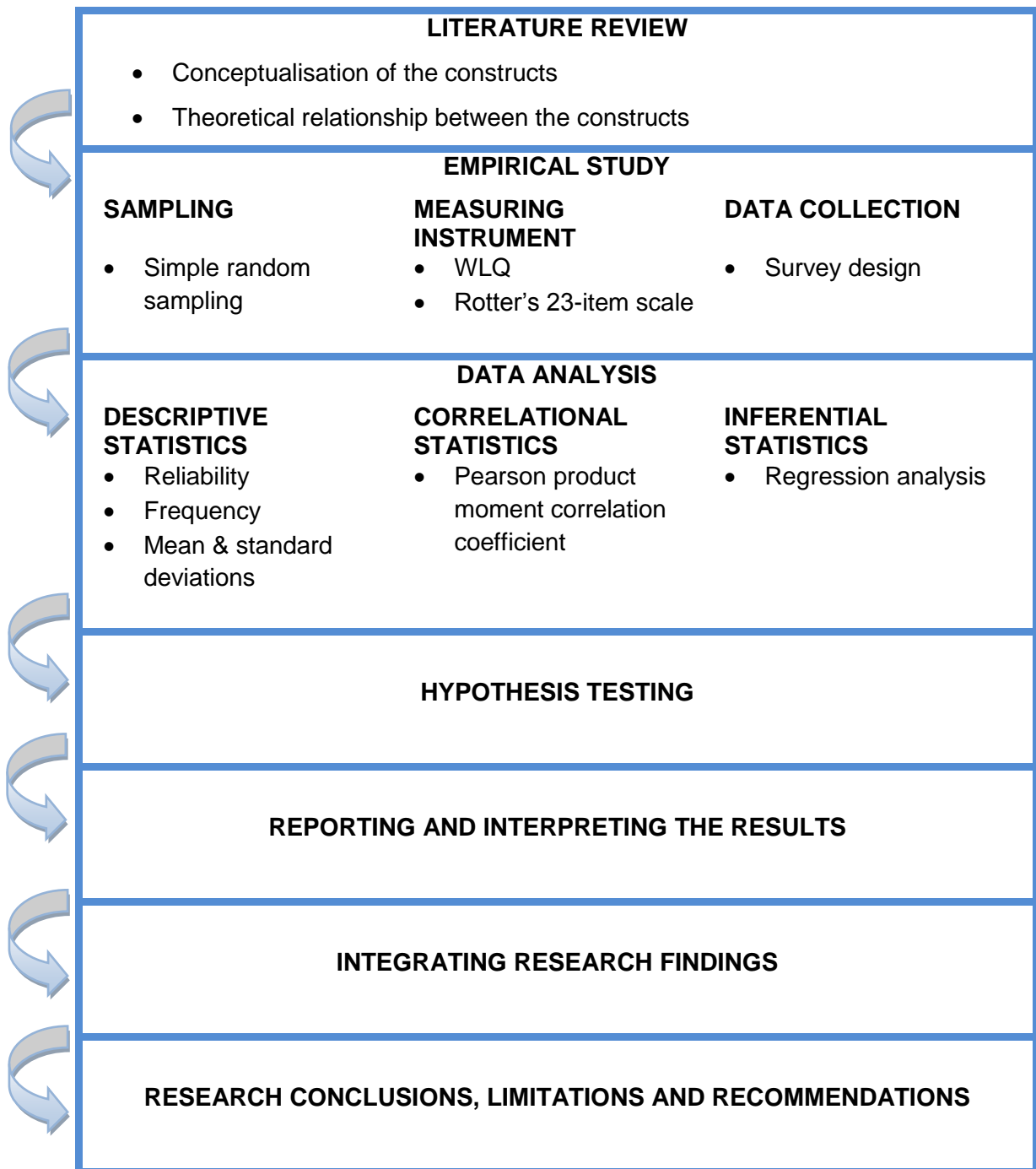
The literature review will focus on exploring the constructs, *occupational stress* and *locus of control*. The general aim of the literature review is (1) to establish whether there is a theoretical link between occupational stress and locus of control, (2) to determine and investigate the nature of nurses' work, and (3) to determine and investigate the stressors and consequences of stress in their environment.

1.6.2 Research Phase 2: Empirical study

The empirical research study will discuss the sample and population, measuring instruments, data collection and analysis, and the hypotheses of the current study. This section will only highlight the key aspects of the empirical study; a more detailed description of the empirical study will be presented in Chapter 4.

Chapter 4 discusses the research methodology to be applied in this research study. This chapter will therefore discuss and explain: (1) the research design, (2) the sample and population, (3) the measuring instruments, (4) the data collection and analysis, and (5) the formulation of the hypotheses. Chapter 5 will summarise and discuss the results obtained in terms of descriptive and inferential statistics. Finally, Chapter 6 will integrate the research findings and discuss the conclusions, limitations and recommendations in more detail.

Figure 1.2: Summary of the research process



1.7 CHAPTER LAYOUT

The chapters of this dissertation will be presented as follows:

Chapter 1: Scientific overview of the research

Chapter 1 provides a scientific orientation to the research by discussing the following elements:

- the background and motivation for conducting the study;
- the problem statement;
- aims and objectives of the research study;
- the statement of significance;
- the research design; and
- the research method.

Chapter 2: The relationship between occupational stress and locus of control

Chapter 2 conceptualises the constructs of *occupational stress* and *locus of control*; and investigates the following elements:

- the constructs: *occupational stress* and *locus of control*;
- theories relevant to the study; and
- the relationship between occupational stress and locus of control.

Chapter 3: The nature of nurses' work

Chapter 3 conceptualises and investigates the nature of nurses' work in terms of the following elements:

- the concept *nurses*;
- the occupational classification of nurses;
- training and development;
- competency framework;
- geographical distribution;
- sources of stress among nurses; and
- the consequences of stress among nurses.



Chapter 4: Research methodology

Chapter 4 provides an overview of the research methodology used in the research study, based on the following elements:

- description of the sample;
- the measuring instruments;
- data collection;
- data analysis; and
- the formulation of the hypotheses.

Chapter 5: Results

In Chapter 5, the research findings will be presented in terms of descriptive, correlational and inferential statistics.

Chapter 6: Conclusions, limitations and recommendations

Chapter 6 concludes the study by providing conclusions, the limitations of the present study and recommendations for future research.

1.8 CHAPTER SUMMARY

This chapter discussed the background to the study; identified the problem statement, aims and objectives; discussed the research design and provided the chapter layout. Chapter 2 will discuss the constructs *occupational stress* and *locus of control* and the relationship between the constructs.

RELATIONSHIP BETWEEN OCCUPATIONAL STRESS AND LOCUS OF CONTROL

2.1 INTRODUCTION

“One of the most intriguing, yet unresolved questions related to locus of control (as a personality determinant of behaviour) concerns the role of expectancy for control in an individual’s reaction to threat and stress” (Wolk & Bloom, 1978:279). Stress can be viewed as a dynamic transactional process, according to Lazarus and Folkman (1984); and individuals experience stress in situations where they “perceive that the demand in the environment exceeds their capacity to deal with them” (Muhonen & Torkelson, 2003:21). Occupational stress has been recognised as a major health issue for organisations, as it can lead to negative emotional reactions, physical health problems in both the short and long terms and counterproductive behaviour at work (Spector, 2002). In studies concerning occupational stress, there has been an increasing interest in the role of generalised control beliefs – also known as *locus of control*.

The construct *locus of control* was initially developed by Jullian B. Rotter in 1954 (Aremu, Pakes & Johnston, 2009). This construct is used to describe one’s expectancies, which influence one’s behaviour and can be placed on two opposite ends of a continuum, namely (1) internal, and (2) external locus of control (Rotter, 1966). Internals (people with an internal locus of control) believe that they have a strong control over their accomplishments, while externals (people with an external locus of control) believe that their accomplishments or reinforcements are not under their personal control but rather under the control of powerful others, luck or chance (Grimes, Millea & Woodruff, 2004). Research indicates that external locus of control is associated with less favourable outcomes, for example, poor physical or psychological health (Scott, Carper, Middleton, White & Renk, 2010). One’s locus of control could furthermore have an effect on the organisation in terms of job satisfaction, performance management, social interaction, motivation and turnover.

According to Rodriguez, *et al.* (2001), it is important to include locus of control in occupational stress research, because it predicts that an individual with an internal locus of control orientation will be more likely to cope effectively with stress; whereas an individual with an external locus of control will rather refrain from such an action, because he/she believes that changing the situation is beyond his/her control or ability. In previous research,

the relationship between personality, occupational stress, job satisfaction and job performance has been intensively investigated. For example, Choo (1986) found that the level of stress that a person experiences is a result of his/her personality type. Spector and O'Connell (1994) further state that the individual's personality type might encourage him/her to enter a job which is naturally inclined to have high stress levels. Rahim (2006) contends that a person with a high internal locus of control believes that he/she can cope with stress more effectively than someone with a high external locus of control. Kalbers and Fogarty (2005) found that an individual with an external locus of control is more likely to be susceptible to stress and is more likely to perceive the event as stressful.

In this chapter, the concepts *stress* and *locus of control*, and in particular their relationship, will be discussed. The elements of locus of control, namely internal and external locus of control, will be compared in terms of how they differ from one another; as well as the underlying theories which are supportive of the construct, namely Rotter's social learning theory and the attribution theory of Weiner. In order to support the occupational stress construct, the biopsychological model of stress and the person-environment fit theory will be discussed.

This chapter will also solve the first research question as stated in Chapter 1, which relates to the relationship between occupational stress and locus of control.

2.2 DEFINING THE CONCEPTS: OCCUPATIONAL STRESS AND LOCUS OF CONTROL

2.2.1 Occupational stress

Although various definitions of *stress* exist in the literature, Monat and Lazarus (in Lutzen, Cronqvist, Magnusson, & Andersson, 2003) point out that there is no agreement between stress researchers and academics on any specific definition of stress, particularly when it is response- or stimulus-based (D'Aleo, Stebbins, Lowe, Lees & Ham, 2007; Miller, Buckholdt & Shaw, 2008). However, theoretical distinctions can be made from three perspectives, namely physiological, psychological and social stress.

In this section, a brief history of the *stress* concept, its origin and rationale will be discussed.

Stress, as a noun, originated in the fourteenth-century Middle English from the word *stresse* (Ridner, 2004) or *strain*, which comes from the Latin word *districtia*, which means being torn or asunder (Evans *et al.*, 2008). In modern literature, *stress* is defined as “a constraining force, influence of a force exerted when one body part pushes against another; emphasis, intense effort, or the predominance of a sound in verse” (Ridner, 2004:537). As a transitive verb, *stress* means “subject to physical or psychological stress” (Ridner, 2004:537).

The most well-known definition of *stress* was developed by Hans Selye in 1956, who became interested in stress while conducting sex hormone experiments on rats (Ridner, 2004). In the rats, he detected an enlargement of the adrenal cortex, shrinkage of the thymus, spleen, lymph nodes and other lymphatic structures, and deep ulcers in the lining of the stomach (Ridner, 2004). In an additional study, Selye exposed healthy rats to a toxic substance and found that a non-specific, physiological syndrome of response to injury took place whenever a living being was exposed to toxic agents; Selye concluded that stress affects the body's reaction and mobilisation when faced with a challenge or threat (Olofsson, Bengtsson & Brink, 2003).

Therefore, according to Evans *et al.* (2008:196), “the term stress could easily become attributed to something *outside* the subject, bearing down on them”. An example would be a stressor in the environment. A stressor is the object of stress, so the subject becomes the recipient of the stressor, which will eventually experience distress (negative stress). In order to alleviate the stress, the stressor has to be identified and removed (Evans *et al.*, 2008). According to Theorell (in Lutzen *et al.*, 2003), *stress* is thus the physical reaction to any kind of stimulus or stressor. The individual might as a result experience different bodily reactions (for example, headaches, back pain and excessive thirst) and/or have various subjective feelings (for example, feeling dissatisfied, unhappy, distressed and depressed) (Leung, Chang & Dongyu, 2011). *Stress* is therefore a tension in our bodily system, which occurs when one fails to relax one's muscles and as a consequence one often feels muscle pains. However, the individual's response will depend on how long the person is exposed to the stimulus.

Similar to Evans' findings Lazarus and Folkman (in Humpel & Caputi, 2001:399) found that *stress* is a “particular relationship between the person and the environment that is appraised by the person as being taxing or exceeding his or her resources and endangering his or her well-being”. Thus, it is an environment in which psychological demands or stressors exceed one's coping resources to reduce the stress (Doncevic, Romelsjo & Theorell, 1998). *Stress* is

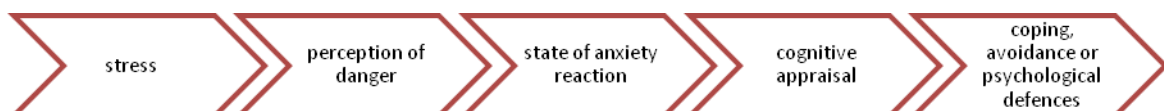
therefore not only a result of the individual or the environment, but a product or combination of the two (Humpel & Caputi, 2001).

McGrath (in Salleh, Bakar & Keong, 2008) further states that *stress* is a *perceived* imbalance between a demand and one's response capability, under conditions where a failure to meet the demand has important perceived consequences. Thus, stress should be perceived by the person; it is how he/she thinks about the situation and how he/she will cope with the stress (Topper, 2007). In addition to this definition, Ridner (2004), Salleh *et al.* (2008) and Seyle (1976) state that stress is always mistaken as bad or negative, but without stress there would be no life. As a result, it should be noted that it also has a positive value. Positive or good stress is generally referred to as eustress, which may result in stimulating and enhancing work performance. Excessive stress, on the other hand, may result in negative stress, which might affect one's health and performance, directly affecting the company's performance (Kendall & Muenchberger, 2009). Distress develops gradually, but considerable time can pass before the individual becomes aware thereof (Olofsson *et al.*, 2003).

As mentioned in the above definition, one may experience stress when there is an imbalance between a demand and constraint. Salleh *et al.* (2008) define a *constraint* as a force that will prevent an individual from doing what he/she desires. Two conditions are important for potential stress to become actual stress, namely there must be uncertainty over the outcome and the outcome must be important (Salleh *et al.*, 2008).

Wolk and Bloom (1978) describe one's reaction to stress as a perception of an internal or external stimulus, which would lead to an emotional reaction of anxiety. The unpleasantness of the threat will then cause the individual to decide on and exercise some action to condense the experience of anxiety. This selection may be preceded by a reappraisal of the stressful stimulus in order to consider an appropriate coping mechanism (Olofsson *et al.*, 2003). This process is illustrated in Figure 2.1.

Figure 2.1: One's reaction to stress



Source: Wolk and Bloom (1978)

Finally, stress in the workplace is often referred to as *occupational stress* (Yip, 2001). Ross and Altmaier (1994) define *occupational stress* as an accumulation of stressors and job-related situations that are perceived as stressful by most individuals. Occupational stress is perceived as a major health problem for both the individual and the organisation (Yip, 2001), as it exceeds one's coping resources (Spector, 2002). Occupational stress can lead to illness, which will cause the employee to experience poor morale, resulting in absenteeism, reduced efficiency and poor performance. Occupational stress will eventually lead to burnout and an increased turnover rate (Yip, 2001). Thus, stress is imposed on individuals, from a work-related perspective, causing not only ill health and a decreased morale, but also high socio-economic costs for the company, employee and community (Sanders, 2001).

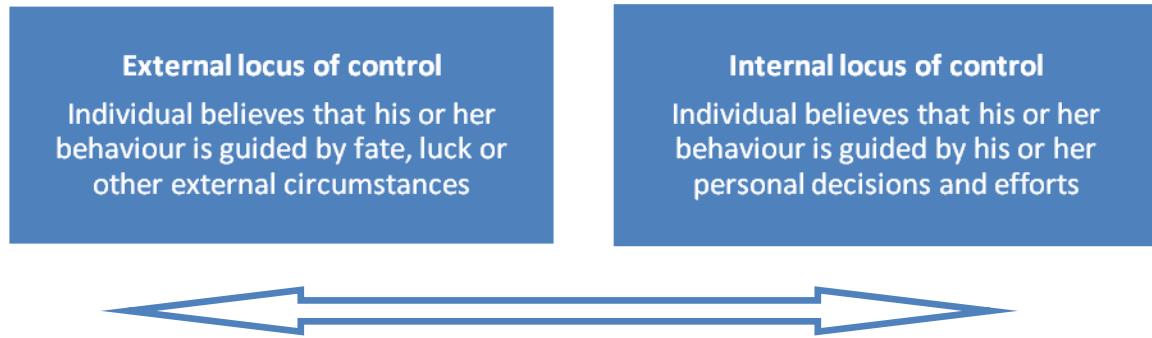
In summary, according to Zeng (2009), stress is a necessary and important element of life as individuals have to deal with daily challenges coming from their private lives and work. Appropriate levels of stress can stimulate or provide the incentive to overcome a challenging situation, however, high levels of stress might result in feelings such as anger and fear and will eventually lead to ill health if not managed.

2.2.2 Locus of control

Locus of control refers to “an individual's personal belief that the events which occur in life are either a result of personal control and effort, or outside forces such as fate or luck” (Grafteo & Silvestri, 2006:593). Rotter (1966) originally defined the term as a generalised belief about contingency between one's actions and actual outcome, brought through social learning mechanisms (Lu, Wu & Cooper, 1999), or an event regarded by some persons as a reward or reinforcement which may be perceived differently by different individuals (Carrim, 2006). Leftron (in Aremu *et al.*, 2009:148) further states that *locus of control* is “how people view the world and how they identify causes of failures in their lives”. One of the determinants of this reaction is the extent to which the person observes the reward, in other words the reward has to follow from his/her own behaviour or attributes, compared with the degree to which he/she feels that the reward is controlled by forces outside himself/herself and may occur independently of his/her own actions. Locus of control is therefore a bipolar construct, ranging from internal to external (Ozmete, 2007).



Figure 2.2: Locus of control



Source: Ozmete (2007)

“Perceptions of positive and negative events as being consequences of one’s own actions and under one’s own personal control are known as internal locus of control” (Smith & Mihans, 2009:64). Consequently, the outcomes of events in one’s life are contingent upon one’s own behaviour (Aremu *et al.*, 2009). In contrast, *external locus of control* refers to the perception of positive or negative events which are unrelated to one’s own behaviour and beyond one’s personal control (Graffeo & Silvestri, 2006). *External locus of control* therefore refers to the belief that the outcomes are not dependent upon one’s action, but upon fate, luck, chance or powerful others (Lu *et al.*, 1999). Locus of control is therefore an important individual difference factor, which is regarded as a stable personality trait.

Phares (in Carrim 2006:125) states that “internal-external locus of control is a concept that has developed out of the social learning theory and deals with the extent to which an individual feels that he or she has control over the reinforcements that occur relative to behaviour”. Internal and external reinforcements represent a continuum of individual differences, which is a result of specific needs (Pannells & Claxton, 2008). It therefore creates a connection between one’s behaviour and a particular reinforcement in the environment.

Garson and Stanwyck (1997:247) define *locus of control* as “the extent to which a person believes that his behaviour has a direct impact on the events that follow”. It thus examines the individual’s general belief about the extent to which his/her personal outcomes depend on his/her personal characteristics or external factors (McCormick & Barnett, 2007). Therefore, an internal will typically feel that he/she is capable of controlling his or her personal outcomes; where an external, on the other hand, believes that personal outcomes are as a result of the environment. That is, the reinforcement or outcome is a function of luck

or fate, and is under the control of powerful others or is simply unpredictable (Chang & Ho, 2009; Scott *et al.*, 2010).

In summary, the concept *locus of control* is used to explain a person's expectancies, those outcomes of his/her behaviour (reinforcement) that can be or are controlled (Bergh & Theron, 2007; De Mooij, 2010). Thus, *locus of control* refers to the extent to which an individual believes that he/she can control events that affect him/her.

2.2.2.1 Elements of locus of control

Individuals differ according to their expectation regarding success and failure, which is influenced by their locus of control. People who believe that they have a strong control over what they accomplish, because of their personal behaviour and competencies, are referred to as having an internal locus of control (they are called internals) (Bergh & Theron, 2007). Internals are people who believe that they are the masters of their own fate and accomplishments (Robbins & Judge, 2005). On the other hand, people whose behaviour is reinforced by expectancies that their accomplishments are ruled by luck, fate, other people or circumstances have a high external locus of control (they are called externals) (Rodriguez *et al.*, 2001). Externals are people who believe that what happens to them is controlled by outside forces (Forte, 2005).

The concept *locus of control* is an indicator of one's core self-evaluation, because individuals who think they lack control over their lives tend to lack confidence in themselves (Bergh & Theron, 2007; Robbins & Judge, 2005). *Self-concept* is the "degree to which individuals like or dislike themselves, whether they see themselves as capable and effective and whether they feel they are in control of their environment or powerless over their environment" (Bong & Skaalvik, 2003:3). *Self-concept* is thus the "totality of the individual's thoughts and feelings", with reference to himself/herself as an object.

Chen and Silverthorne (2008) found that locus of control is integrated and applied occupational behaviours, such as motivation, job performance, job satisfaction and leadership. Individuals with a positive core self-evaluation – internal locus of control – perform better or are more motivated, because they are more determined and committed to their goals and will therefore persist longer to attempt to reach their goals (Chen & Silverthorne, 2008). Gregory (in Carrim, 2006) found that internals perform better than externals after a failure, because internals view failure as losing control, therefore they will try

harder to stay in control in the future. Externals will not make such an effort to maintain control, because they do not believe their contribution will have an effect on the outcome of the event.

Internals are more successful in several work performance variables, because they are more self-sufficient in planning and executing tasks, are easier to motivate and take responsibility for their decisions and outcomes (Chang & Ho, 2009). Ng, Sorensen and Eby (2006) confirm Bergh and Theron's statement, namely that internals very often have higher levels of job motivation, job performance, job satisfaction, and leadership than externals. Internals are more likely to try and improve their lives, compared to externals (Borland in Carrim, 2006). Internals are expected to be more successful than externals in tasks that require more skills. This might be due to the fact that internals use the information they obtain from the environment more effectively and to their advantage than externals (Bass & Bass, 2008). Internals will look for information and adapt their behaviour patterns, which will assist them in personal control over their environments.

According to Rotter (1966), internals have the following characteristics:

- Internals tend to attribute outcomes of events to their own control (Rotter, 1966). In other words, internals generally encompass two characteristics, namely high achievement motivation and low outer-directedness. Therefore, internals are more likely to work for achievement, to tolerate delays in rewards and to plan for long-term goals, whereas externals are more likely to lower their goals (Rotter, 1966).
- After being unsuccessful at a task, an individual with an internal locus of control will re-evaluate his/her future performance and lower his/her expectation for success, whereas an external will raise his/her expectations (Rotter, 1966).
- Internals are furthermore better able to resist coercion, whereas externals are more outer-directed (Rotter, 1966).
- Internals are better at tolerating ambiguous situations (Rotter, 1966). There is also evidence in clinical research which indicates that internals correlate negatively with anxiety; and that internals may be less prone to experience depression and learnt helplessness. *Learnt helplessness* is a "condition of a human being or an animal in which it has learned to behave helplessly, even when a situation is restored for it to help itself

by avoiding an unpleasant or harmful circumstance to which it has been subjected” (Segilman, 1975).

- Internals will use their social support structure for their own benefit.
- Internals make better mental health recovery in their adjustment to physical disability in the long term.
- Internals are more likely to prefer games based on skill, where externals prefer games based on chance or luck.

In summary, according to Carrim (2006:129), “internals seem to be more independent, cognitively able, mentally aware, inclined towards learning and motivated”.

When assessing one’s locus of control, various factors need to be taken into consideration, for example, the situation, the value of outcomes, ability, demographic factors such as ethnicity and the type of performance ratings used (Bergh & Theron, 2007). Arslan, Dilmac and Hamarta (2009) further state that one’s locus of control is influential in the determination of a person’s emotions, thoughts and behaviours and in coping with life events.

2.3 THEORIES RELEVANT TO THE STUDY

2.3.1 Occupational stress

2.3.1.1 Biopsychosocial model of stress

The biopsychosocial model of stress is one of the most well-known and comprehensive models of stress (Cordon, 1997). The model recognises an important contribution and transactional nature of three systems, namely biological, psychological and social systems (Landow, 2006). The model therefore recognises the behavioural, emotional, generic or pathogenic factors that might change the body’s internal setting (Christensen, Martin & Smyth, 2004). Taylor (in Ridley 2005:51) defines the *biopsychosocial model* as: “research in behaviour medicine and, correspondingly, in health psychology has taken the position that biological, psychological and social factors are implicated in all stages of health and illness, ranging from those behaviours and states that keep people healthy to those that produce severe, long-term and debilitating disease”.

The biopsychosocial model states that stress consists of three components, namely an external component, an internal component and the interaction between the external and internal components.

a. *The external component of the biopsychosocial model*

The external component of the model involves environmental or external events that precede the recognition of stress and can bring forth a stress response (Amponsah, 2011). These events are often categorised as major life events, daily dilemmas, role strains or conflict, among other stressor domains (Landow, 2006). The stress reaction is therefore caused by a number of psychosocial stimuli, which are either physiologically or emotionally threatening and disrupt the body's homeostasis (Christensen *et al.*, 2004).

Walter Cannon (1932) was the first physiologist to use the term *homeostasis*. He found that the body possesses an internal mechanism to maintain stable bodily functioning or equilibrium. As the environment presents the organism with challenges, the body must respond to each new situation by adjusting the physiological systems to compensate for the resources which are being threatened.

One is aware of emotionally threatening situations, and these usually cause disruptions in the body's homeostasis. Christensen *et al.* (2004) define homeostasis as "the ability or tendency of an organism to maintain internal equilibrium and a state of health by regulating its physiological processes". One would feel conflicted, frustrated or pressured (Hanzlikova, 2005). The most common stressors include personal, social or family, work and the environment. These stressful events have furthermore been linked to a variety of psychological physical complaints (Amponsah, 2011). For example, a stressor could cause severe stress, which could lead to health problems; in turn, these health problems could be associated with stressful work demands, job insecurity and changes in job responsibility.

One has to take into account that stressors differ in their duration (Olofsson *et al.*, 2003). For example, acute stressors are stressors of a relatively short duration and are not considered a health risk, where chronic stressors are of a longer duration and can pose a serious health risk due to a prolonged activation of the body's stress response.

b. *The internal component of the biopsychosocial model*

The internal component of the biopsychosocial model involves a set of neurological and physiological reactions to stress (Ampsonah, 2011; Landow, 2006). Selye defined the term *stress* as “a non-specific stress response, as it can result from a variety of different kinds of stressors and he therefore focused on the internal aspects of stress” (Ampsonah, 2011:757; Cordon, 1997:1). Selye further notes that a person who is subjected to prolonged stress goes through three phases, namely alarm reaction (an increase in activity, which occurs immediately when the individual is exposed to the threat), stage of resistance (involves coping and attempts to reverse the effects of the alarm stage) and exhaustion (this stage is reached when the individual has been repeatedly exposed to the stressful situation and is incapable of showing further resistance) (Ross & Chan, 2003).

The alarmed reaction stage involves a classic fight-or-flight response, where the body’s physiological system drops below its optimal functioning. Thus, an external threat might bring forth the fight-or-flight response, increasing the activity rate and arousal. The psychological changes will cause the individual to either escape from the source or fight. When a threat is discovered, the hypothalamus signals both the sympathetic nervous system and the pituitary. The sympathetic nervous system stimulates the adrenal glands, which, in return release corticosteroids to increase metabolism, which provides immediate energy. The pituitary gland releases adrenocorticotrophic hormone (ACTH), which also affects the adrenal glands (Ross & Chan, 2003). The adrenal glands then discharge epinephrine and norepinephrine, which prolongs the fight-or-flight response. As the body attempts to compensate for the physiological reactions, the organism enters the resistance stage.

The physiological compensatory systems begin working at peak capacity to resist the challenges that the entire system is confronting, and according to Selye (in Davidyan, 2008), actually raise the body’s resistance to stress above homeostatic levels. The body cannot sustain this state forever as it consumes too much energy. Therefore, according to Amponah (2011), the state of resistance is a continued state of arousal. If the stressful situation is prolonged, the high levels of hormones, which are excreted during the resistance phase, may disrupt the homeostasis and harm the individual’s organs, which will leave him/her vulnerable to diseases.

Once the energy has been consumed, the organism enters the stage of exhaustion (Coon & Mitterer, 2008). At this stage, resistance to environmental stressors breaks down and the

body becomes susceptible to tissue damage and perhaps even death. The body's energy reserves are finally exhausted and a breakdown occurs. Selye (in Cordon, 1997) notes that in humans, many of the diseases caused by stress occur in the resistance stage and are therefore referred to as "diseases of adaptation". These diseases include high blood pressure, headaches, insomnia, cardiovascular and kidney diseases.

According to Selye (in Stephan, 2008) the alarm reaction stage is comparable to an acute stress response and the exhaustion stage is comparable to a chronic stress response.

c. *Interaction between the external and internal components*

The third component of the biopsychosocial model of stress is the interaction between the external and internal components, which involves the individual's cognitive processes (perceived meaning of an event). Lazarus and colleagues (in Brower-Berkhoven, 2006), proposed this theory of stress where they take into account the on-going relationship between the individual and the environment. The emphasis of their theories is on the meaning that an event has for the individual and not on the physiological responses. Thus, an individual first has to think that an event is stressful before he/she will have a physiological stress response to the situation. The appraisal of events furthermore plays an important role in the magnitude of the stress response and the coping method that the individual will use to manage his/her stress (Amponsah, 2011).

In summary, the way the person views or appraises the situation will play an important role in determining, not only the magnitude of the stress response, but also the kind of coping strategies the individual may need in order to deal with the stress.

2.3.1.2 *Person-environment fit model*

The person-environment fit model is viewed as one of the first theoretical models in occupational stress (Spies, 2004). This model is first and foremost accountable for individual behaviour (Sekiguchi, 2004:180). The model was extended and developed much further since early origins, and it is an approach which views psychological and physical stress as being the result of an incongruent person-environment fit (Van der Colff, 2005). The person-environment fit model theorises that "the fit between a person and the environment determines the amount of stress a person perceives" (Landy & Conte, 2007:436); or the

“amount of strain experienced by an individual is proportional to the degree of misfit between the person and the environment” (Fogarty & Machin, 2003:4).

The impact of the environment has been researched in terms of constructs such as *life events*, *daily hassles* and *role overload and under-load* (Thomas & Hersen, 2002). The person and environment are characteristics of an interactive perspective to understand the nature of stress. The person-environment fit model theorises that an individual will experience stress when there is a misfit between the individual and the environment (Ivancevich, Konopasle & DeFrank, 2003). The model therefore suggests that there is an objective and subjective representation between the individual and the environment (Harrison in Ivancevich *et al.*, 2003).

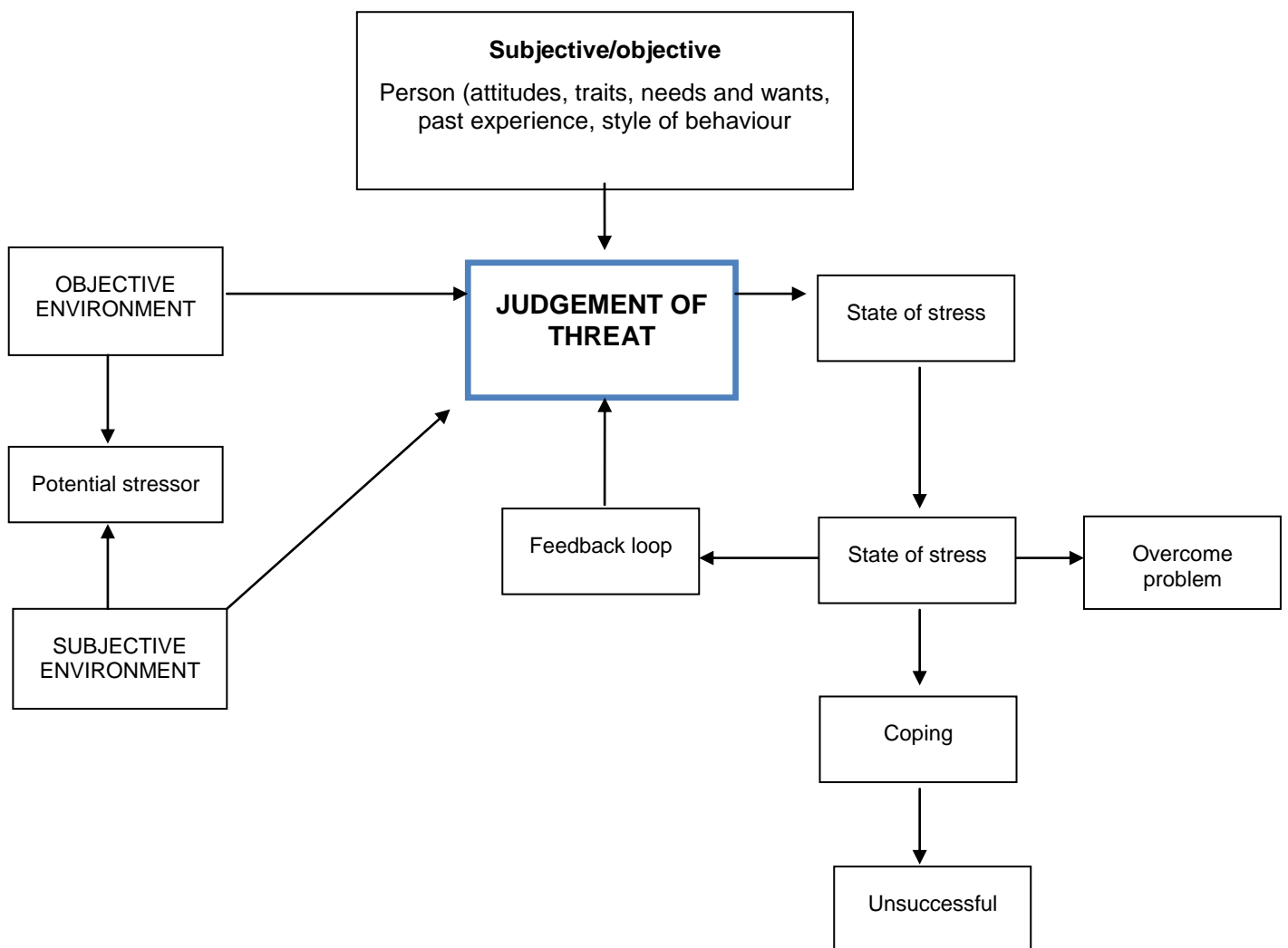
An objective person refers to his/her characteristics in actual terms; for example, mechanically skilled, five years of workplace experience (Ivancevich *et al.*, 2003). The subjective person, on the other hand, refers to the person's perception of his/her characteristics, for example, self-efficacy (a person's beliefs about personal competence and skills in a particular situation or subject area) (Webster, 2006:87) and values (LaDou, 2007).

According to this theory, the objective environment refers to the actual work environment, whereas the subjective work environment refers to the individual's perception/observation of the physical and social work conditions (Ivancevich *et al.*, 2003). Perceptual inaccuracies can cause a misrepresentation for the individual in terms of an objective versus subjective environment fit.

Ivancevich *et al.* (2003) state that the model distinguishes between two types of fit, namely a fit between environmental demands and the person's abilities; and between the needs of the individual and the supplies in the environment (Greenberg, 2008). Demands include the individual's duties and expectations with reference to his/her job role. A person's abilities include his/her mechanical competencies, communication skills and computer literacy. Therefore, a demands-abilities fit is achieved when the individual's contributions meet the environmental demands (Sekiguchi, 2004). The person has thus required the abilities to meet environmental demands. Supplies in the model include resources such as a supervisor's recognition, the availability of promotions and training opportunities. The needs-supplies fit therefore occurs when the environment satisfies the person's needs, desires and/or preferences. Therefore, a demands-abilities fit is achieved when the individual's contribution meets the environmental demands (Sekiguchi, 2004). The model therefore

suggest that in order to achieve a supplies and demands fit, the individual and environment need to refer to the same dimension (Sekiguchi, 2004). According to this statement, *stress* is something that is caused due to an individual's perception of what is expected and demanded of his/her ability to cope with these demands (Ivancevich *et al*, 2003: 142). When the individual's expertise and abilities match the requirements of the position and the work conditions, then only is there a good person-environment fit (Landy & Conte, 2007). Figure 2.3 is a summary of the person-environment fit model.

Figure 2.3: Person-environment fit model



Source: Thomas and Hersen (2002:47)

In order to understand the nature and consequences of stress, one has to recognise the importance of both the person and the environment, as it influences and/or determines one's

behaviour, attitudes and well-being (Spies, 2004). The person-environment fit model of stress was developed by French, Rodgers and Cobb (Thomas & Hersen, 2002).

French, Rodgers and Cobb (in Kirkcaldy & Martin, 2000), state that the person-environment fit model theory assumes that people vary in their needs and abilities, just as jobs vary in their incentives and demands. They identified eight dimensions in correlation to stress: job complexity, role ambiguity, responsibility for person, workload, overtime, income, length of service and education.

Salleh *et al.*, (2008:66) identified the following causes of stress:

- *Factors intrinsic to the job:* Stress can be caused by too much or too little work, time pressures, deadlines and having to make too many decisions. Various research studies have linked working conditions of a job to physical and mental health. Poor mental health was further related to unpleasant working conditions, the necessity to work fast and spend a lot of physical effort and excessive and inconvenient hours.
- *Role in the organisation:* one's role in the organisation can include role ambiguity and/or role conflict. *Role ambiguity* is the situation where the individual has a lack of understanding of his/her role and/or is unclear about the expectations of his/her performance (Lazo, 2008). *Role conflict* on the other hand, exists when the demand of the job differs from what he/she thinks of the job role and specifications.
- *Relationship at work:* work relationships refer to relationships with the superior, subordinates and colleagues. A lack of considerate behaviours of supervisors appears to have contributed to feelings of job pressure. Managers who lack supervision skills could cause potential stress to the employees and the managers. Stress can also be caused by a lack of social support in different situations.
- *Career development:* two major clusters of this stressor are (1) lack of job security, fear of redundancy, obsolescence or early retirement, and (2) status incongruity, for example, under- or overpromotion, frustration at having reached one's career ceiling.
- *Organisational structure and climate:* people with greater opportunities for participation in decision-making reported greater job satisfaction, low related feelings of threat and

higher feelings of self-esteem. Non-participation at work is a significant predictor of strain and job-related stress.

The effects of these stressors may negatively affect one's mental and physical health and reduce job satisfaction. Kirkcaldy and Martin (2000) state that not all individuals may perceive or react to these pressures in the same way and the extent to which stress will impact may be restrained by individual personality characteristics, such as type A behaviour patterns and locus of control.

The person-environment fit theory suggests that stress does not occur from the person or the environment separately, but from a lack of fit with one another (Thomas, 2002). According to Thomas and Hersen (2002) and Spies (2004), there are three distinctions to acknowledge in terms of the person-environment theory of stress:

1. the person and the environment are two separate identities;
2. the person and the environment are defined in subjective and objective terms; and
3. there are two types of fit that are assumed in the person-environment fit model.

In summary, the subjective person-environment fit is crucial to one's mental health and other dimensions of well-being. Therefore, stress will arise when:

1. the environment does not provide adequate supplies to meet the person's needs; or
2. the person's abilities do not meet the requirements of the demands which are necessary to receive the supplies that the environment has to offer.

A misfit between the individual and the environment can lead to two sets of consequences; namely an increase in the individual's blood pressure, which might lead to restlessness and anxiety. These strains might cause physical illnesses, such as chronic depression, in the long term (Fogarty & Machin, 2003). Secondly, it involves coping efforts to overcome and resolve the person-environment misfit. According to Ivancevich *et al.* (2003), an individual will employ coping mechanisms to reduce and improve the person-environment misfit. The coping mechanisms employed will be used to change either the individual or the environment.

2.3.2 Locus of control

2.3.2.1 *Social learning theory*

Dollard and Miller were the first to introduce the term *social learning* (Craighead & Nemeroff, 2001). However the *social learning theory* was first developed by Julian B. Rotter during the era of Freud's psychoanalysis (Encyclopaedia of Psychology, 2001), which focused on an individual's motives as a behaviour predictor (Anonymous, 2007). The psychoanalysis theory focused on the individual's unconsciousness and the learning approaches and was governed by the drive theory. The drive theory stated that individuals were motivated by physiologically based impulses, which motivated the individual to satisfy them. The theory therefore assumed that people learnt from meaningful experiences, the reciprocal nature of life experiences, the goal-directed motivational nature of personality, and the role of expectancies (Carducci, 2009).

The theory assumed its present shape in the late 1940s and early 1950s; when it was captured in Rotter's 1954 publication, the *Social Learning and Clinical Psychology* handbook (Craighead & Nemeroff, 2001). In the 1970s Rotter's monograph on internal-external control was recognised.

Rotter moved away from psychoanalysis and the drive theory; because he believed that a psychological theory should have a psychological motivational principle (Anonymous, 2007). Rotter therefore chose the empirical law of effect as his motivating factor. According to the law of effect an individual will look for positive stimulation or reinforcements to avoid unpleasant stimulation (Stone, 1998; Anonymous, 2007). Rotter therefore combined behaviourism and the study of personality, without being dependent on psychoanalysis as a motive force. He claimed that cognition, in the form of expectations, is a crucial factor in social learning – behaviour is thus learnt or acquired in a meaningful environment, which is rich with social interaction with other people (Craighead & Nemeroff, 2001).

The theory thus includes behavioural and cognitive variables. Rotter identified four main components of his social learning theory which predicts behaviour (Burger, 2007) the components are as follows:

1. *Behaviour potential*: This is the likelihood that a given behaviour will occur as a result of a single reinforcement or set of reinforcements (Weiner, 1992). In other words, it is the

likelihood of an individual engaging in a particular behaviour, in a particular situation (Kandula, 2003:97). Each possible response to a situation has a different behaviour potential, for example, if one screams out an insult, it means the behaviour potential for that response was stronger than for any of the other possible responses. Behaviours include motor acts, cognitive activity, verbalisation and emotional reactions (Craighead & Nemeroff, 2001). The variables that determine the strength of the behaviour potential are expectancy and reinforcement value.

2. *Expectancy*: This component is considered to be a cognition or belief about the probability of some object or event (Varadanyan, 2011). An individual will base his/her expectancies largely on how things turned out at other times when he/she was in a similar situation (Webster, 2006). If one has a strong or high expectancy, then the individual is convinced that the behaviour will result in the outcome (Schultz, 2009:8). Having a low expectancy means that the individual is less likely to believe that his/her behaviour will result in reinforcement. The more often the individual's behaviour has led to reinforcement in the past, the stronger the person's expectancy that the behaviour will achieve that outcome in the present. Rotter therefore identified three kinds of expectancies, namely (1) simple cognitions or labelling or stimuli, (2) expectancies of behaviour reinforcement outcomes, and (3) expectancies for reinforcement sequences (Ryckman, 2008).
3. *Reinforcement value*: This component is the degree to which one prefers one reinforcer over another (Craighead & Nemeroff, 2001). The reinforcement value one assigns to a particular outcome will vary from situation to situation (Ryckman, 2008). On the other hand, things one wants to happen, to which one is attracted, have a high reinforcement value; and things that one wishes to avoid have a low reinforcement value. If the probability of achieving reinforcement is the same, then one will exhibit the behaviour with the greatest reinforcement value (Schultz, 2009). The value of a reinforcer is determined by the reinforcers that it might take on in the future. If the positive value is still greater than the lowest amount, then the term is known as the *minimal goal* (Burger, 2007). If one achieves an outcome that is equal to or greater than the minimal goal, then the individual will feel that he/she has achieved something or was successful. When the level of the person's reinforcement falls below the minimal goal, the reinforcement will feel like a failure. As with anything, people differ in their minimal goals, thus the same outcome may represent success to one person, but failure to the next. Therefore, a person's expectancies and the reinforcement outcome may differ across situations,

depending on the person's subjective experience of the environment (Rickles, Wertheimer & Smith, 2010). As in the case of expectancy, the reinforcement value is subjective (Schultz, 2009).

Behaviour potential, expectancy and reinforcement value can be combined into a predictive formula for behaviour:

$$BP = f(E + RV)$$

This formula can be read as follows: "behaviour potential is a function of expectancy and reinforcement value" (Rotter, 1966). In other words, the likelihood of a person exhibiting a particular behaviour is a function of the probability that the behaviour will lead to a given outcome and the desirability of that outcome (Rickles *et al.*, 2010). If the expectancy and reinforcement values are high, then the value of the behaviour potential will increase. If the expectancy and reinforcement values are low, then the behaviour value will also decrease.

4. *Psychological situation*: Although the psychological situation does not fit into Rotter's behaviour potential formula, he still felt that it is important to take into account that individuals interpret situations differently. Rotter defined the *psychological situation* as: "the set of cues serving to arouse in the individual certain expectancies for reinforcement of specific behaviours" (Schell, 2002:1). The specific behaviour depends on the individual's subjective experience of the environment. Behaviour takes place in this environment and therefore the social context of behaviour must be described in order to understand and predict action (Weiner, 1992).

The social learning theory views behaviour as a function of the person's needs, values and expectancies (Schell, 2002) and therefore focuses on the interaction between the individual and the environment (Kirchner, 2003). One cannot speak of personality that is independent of the environment; neither can one focus on behaviour as an automatic response to an environmental stimuli (Anonymous, 2007). Howard in (Kirchner, 2003) argues that this interaction involves the individual to engage in specific behaviours to gain specific rewards or to avoid possible frustrations present in the environment. Howard furthermore argues that the probability of such behaviour occurring is related to the individual's expectancy that the behaviour will gain reinforcement and that the reinforcement will hold value to the individual (Kirchner, 2003).

In terms of the social learning theory, *expectancy* is defined as “the probability held by the individual that a particular reinforcement will occur as a function of a specific behaviour on his part in a specific situation or situations” (Craighead & Nemeroff (2001:1565). Expectancy does not depend on the value or importance of the reinforcement. An individual’s expectation that reinforcement will occur is furthermore based on his/her subjective interpretation of past experiences and the subjective interpretation determines behaviour in a new situation (Kirchner, 2003). When a situation is thus perceived as being similar to expectancies, one would generalise from one situation to the next. In order to further predict how a person will respond to a certain situation, one has to take one’s perceptions, expectancies and values into account. Beyond this, Rotter proposes that in a new situation one relies on generalized expectancies – these are beliefs one holds about how often one’s actions typically lead to reinforcement and punishments (Anonymous, 2007). The concept of *generalised expectancies of control of reinforcement* is also known as *locus of control* (Anonymous, 2007). Rotter describes a general theory of personality with variables based on the ways in which individuals think about their expectancies. Expectancy is not always situation-specific, but often these expectancies are specific for the situation on what they are based (Noordewier & Stapel, 2009). This means that people do not always behave consistently across situations. Locus of control is one such generalised expectancy in Rotter’s social learning theory.

The term *locus of control* was developed in 1954 by Julian B. Rotter. It refers to an individual’s perception about the main causes of events in his/her life (Aremu *et al.*, 2009). According to Rotter (1966), an individual could either have an internal or external locus of control. When the individual has an external locus of control, he/she believes that he/she will have little control or power to affect personal outcomes; whereas an internal understands that he/she is able to control and manipulate things that happen in his/her life (Miller, 2005). Rotter furthermore argues that internal locus of control would be positively related to achievement, and an external locus of control negatively related to achievement (Kirchner, 2003).

Stone (1998) found that the social learning theory has two major limitations, namely (1) the theory’s comprehensiveness and complexity make it difficult to operationalise and (2) many applications of the social learning theory focus on one or two constructs, such as self-efficacy, while ignoring others.

In summary, Rotter's social learning theory states that, in any given situation, the likelihood that a person will engage in a particular behaviour is a function of two things, namely (1) a person's expectancy that the behaviour will lead to a particular outcome or reinforcement in the situation; and (2) the value of reinforcement to the person in the situation (Wallston, 1992).

2.3.2.2 *Attribution theory*

Heider, Jones, Davis and Kelley developed the first attribution theory in 1958 (Borkowski, 2010). The attribution theory is another cognitive approach to understand an individual's behaviour (Weiner, 1972). Heider believes that people have two behavioural motives, namely (1) the need to understand the world around them, and (2) the need to control their environment (Borkowski, 2010). The theory seeks to explain "how an individual's perceived reasons for past success and failure contribute to their current and future motivation and success" (Assessing Woman in Engineering, 2005:1). Carrim (2006) further states that the attribution theory deals with how individuals explain things. There are two methods used to explain why things happen, namely (1) an external attribution or (2) an internal attribution. An external attribution assigns a cause to an outside agent or source (Smith, 2003); thus the outside object motivated the event. On the other hand, an internal attribution assigns causality to the individual (Lakhiani, 2007). An internal attribution implies that the individual is directly responsible for the event (Carrim, 2006).

Seel and Angelini (2004) found that different attribution styles characterise and explain why people respond/react differently, but predictable, to events and the causes of the event. Individuals were likely to attribute success to personal ability and failure to a task, this phenomenon is known as a "self-serving bias" (Park & Kim, 1998). According to Carrim (2006), individuals tend to make:

- internal attributions about themselves when they succeed;
- internal attributions about others when they fail;
- external attributions about themselves when they fail; and
- external attributions about others when they succeed.

According to Pretorius (2004), the attributions people make about themselves have an impact on their motivation, and these attributions are based on the perceptions of the actual internal and external forces. Thus, the desired behaviour will follow naturally. When people believe that their behaviour is under the control of an external force and does not depend on

themselves, a problem could arise when the individual uses external things, for example rewards and punishments, to influence his/her behaviour (Carrim, 2006). The reward or punishment does not allow the individual to make an internal attribution and thus brings the desired behaviour under his/her control. Therefore, people will prefer an external agent to cause their actions.

Heider (in Shabazz, 2007) points out that people attempt to make sense of their world by making attributions about the cause of certain outcomes. He distinguishes between personal and situational causes. The extent to which people use similar combinations of causes over time is known as “attributional style” (Assessing Woman in Engineering, 2005). One could furthermore distinguish between two types of attributional styles, namely (1) causal attribution, and (2) self-enhancing attributional style.

Causal attribution is concerned with how people understand the reasons for their success and failures (Assessing Woman in Engineering, 2005). The attribution theory positions causal attribution along a continuum of three dimensions, namely (1) internal and/or external, (2) stable or unstable, and (3) controllable and/or uncontrollable. Locus of control has two distinctive continuums, namely (1) internal locus of control, and (2) external locus of control (Rotter, 1966). The stability dimension captures whether causes change over time or not, for example, ability can be classified as stable, internal cause and effort, on the other hand can be classified as unstable (Weiner, 1985). Finally, controllability has to do with the causes that one can control, such as skill, and the causes one cannot control, for example, moods and emotions. People who attribute their accomplishments to internal or controllable features tend to be more motivated and will therefore continue to be successful, as opposed to those with an alternative attribution style (Assessing Woman in Engineering, 2005). Weiner (1985) furthermore found that people attribute event outcomes in achievement situations to one of four basic causes, namely (1) ability, (2) effort, (3) task difficulty, and (4) luck (Carrim, 2006; Park & Kim, 1998). For both Kelley and Weiner (in Loos, Bridges & Critelli, 1987), causal attributions are an inherent part of the information processing method employed by all individuals.

Self-enhancing attributional styles, on the other hand, are more motivational than self-defeating attributional styles (Assessing Woman in Engineering, 2005). By attributing the causes of success to internal and controllable features, and the causes of one’s failures to external and unstable features, one is enhancing oneself, because this way of thinking allows one to integrate positive outcomes into one’s self-concept, which will automatically eliminate

the integration of negative outcomes (Kashima, Foddy & Platow, 2002). The best attribution style to use would be to attribute one's success to one's abilities, and one's failures to external, uncontrollable factors (such as lack). These styles can, however, cause problems, because people seem to believe that it is a natural ability to expend the effort. A person who doubts his/her ability may choose not to expand the effort, because it will demonstrate a lack of real ability to other individuals.

One's beliefs about what causes and influences one's behaviour have a major impact on one's expectations and one's motivations (Carrim, 2006). One method to change one's beliefs is thus to change one's attributions.

The attribution theory is important to consider because it has an impact on an individual's behaviour and emotions and it influences one's expectancies. On the other hand, according to Manusov and Spitzberg (2008), the attribution theory has some limitations, namely (1) it was originally developed as a universal theory of human sense-making, but research has limited its scope, (2) the attributions may or may not work the same in other contexts where the importance of making attributions is less necessary, and (3) the attributional thought may be culturally restrained to some extent.

2.4 RELATIONSHIP BETWEEN OCCUPATIONAL STRESS AND LOCUS OF CONTROL

Based on research conducted in the clinical, experimental, health and occupational field of psychology, one could establish that control plays an important role in preventing the stress experience and functional ineffectiveness (Smith, 2003). Lu *et al.*, (1999) found that there is a linear relationship between one's locus of control and self-reported psychopathology; therefore one could assume that there is also a linear relationship between one's locus of control and stress. The aim of this section is to determine whether there is a relationship between locus of control and stress.

Based on reviews of the concept *locus of control*, one could conclude that people who perform better in most employment situations generally possess a strong internal rather than external locus of control (Singh, 2006). They tend to be more successful in their careers and earn a higher income than their external counterparts. They furthermore experience greater job satisfaction, are more committed to and involved with their work, which will result in greater performance standards (Lu *et al.*, 2009). Additionally, internality is related to

emotional and physical symptoms, occupational stress, absenteeism, which will eventually result in an intention to leave the organisation, which will lead to a high turnover rate for the organisation (Smith, 2003).

Internals tend to be more in control over their work environment (Pretorius, 2004). Externals, on the other hand, have the tendency to develop psychological and physical symptoms in response to a stressful life event (Bollini, Walker, Hamann & Kestler, 2004). Internals moreover believe in their own competence and their high performance standards are due to their own efforts, such as ability (Sigelman & Rider, 2006). Internals tend to invest in their own effort when completing a task and will conduct research in order to obtain facts when completing a difficult or challenging task; therefore their performance effort will also increase (Smith, 2003). Internals, in addition, perform better because their expectancy that their effort will lead to good performance is higher (Beukman, 2005), which will ultimately lead to rewards. Internals seem to be motivated by a performance-based reward system (Singh, 2006). Thus, internals believe that their experiences are rewarded due to their own behaviour and attributes (Kirkcaldy & Martin, 2000; Smith, 2003).

Internals are therefore well suited to leadership positions and other jobs requiring initiative, independent action, complex thinking and high motivation (Singh, 2006).

Internals, view themselves as strong and will therefore experience less stress (Singh, 2006), while externals might feel weak and less in control and will therefore be exposed to a greater degree of stress (Arslan *et al.*, 2009). Thus, if an individual feels that he/she is in control of a particular situation, the likelihood is that he/she will perceive the situation as less threatening or stressful. According to Wolk and Bloom (1978), internals, who expect to control behaviour consequences, are more successful in confronting environmental demands than externals. Phares (1976) found that this ability of internals to master the environment has been recognised as one of the most consistent behavioural correlates of locus of control. An external will be more likely to perceive a situation or stimulus as a threat, because he/she believes that he/she lack control over the situation; whereas an internal will perceive the environment as something which he/she can control (Ades, De Man, Lauer & Marquez 2008). Externals will therefore make less effort to change or improve their situations; hence they will experience a greater degree of stress (Arslan *et al.*, 2009). Externals will consequently feel more inadequate, perceive higher degrees of anxiety and depression (Dunn, Elsom & Cross, 2007), and are less strong and flexible. Due to the fact that internals experience lower levels of anxiety and stress, one could conclude that an internal locus of

control could be used as a stress buffer (Bernardi, 2001). An individual with an internal locus of control will therefore be challenged by a stressor, whereas an external will be threatened by it.

An internal will generally use a solution-orientated coping method, whereas an external would either ignore it or give in to the problem (Bernardi, 2001). There are two reasons why internals choose the abovementioned coping measure: (1) internals believe that they have control over reinforcements that occur as a result of their behaviours; and (2) internals are able to obtain and utilise information more effectively when exposed to a variety of tasks designed to be stressful (Singh, 2006). Internals might therefore be more interested in tasks which involve research and development and competition. In summary, internals tend to have a stronger basis for coping with stress and reducing anxiety.

Locus of control not only influences one's experience of stress, but also one's emotional upsets and similar illnesses (Dunn, Elsom & Cross, 2007). External locus of control is related to the experience of illness (Roddenberry, 2007). Externals are therefore likely to experience more psychological and physical symptoms and less life satisfaction and efficacy. It has been noted by Spector (2002) that an internal locus of control orientation or belief is an important element of emotional adjustment and it provides the individual with the ability to cope with stress in general life and work. Locus of control in the workplace has likewise been linked to employee well-being.

Internals seem to be more satisfied with their work due to the fact that they are able to cope effectively with stress (Lane, 2007). Employees with an external locus of control seem to report more burnout, job dissatisfaction, stress and lower self-esteem (Stellman, 1998).

In summary, according to Lu *et al.*, (2009), an individual with an internal locus of control tends to experience a lower perception of work, role and general life stress. The rationale behind this statement is that internals do not experience any desirable or undesirable life events, but only personal perceptions or interpretation of the events. This statement further clarifies the impact that locus of control has on the exposures of life events.

One's locus of control is furthermore a world view about where the influence over the environment rests. Thus, if a person believes that he/she can influence events in his/her environment, then he/she might expect that the environment is predictable and he/she has control over those events. In other words, he/she will expect the environment to be

contingent upon his/her own action. In contrast, an external will be more likely to expect the environment to be unpredictable and uncontrollable. Externals may perceive the environment as non-changeable; therefore they may experience more sources of stress, as they tend to experience the environment as threatening or frightening.

2.5 CONCLUSION

The aim of Chapter 2 was to conceptualise the constructs *occupational stress* and *locus of control* from a theoretical perspective. The theory and constructs are essential to understand the relationship between occupational stress and locus of control. According to the literature reviewed, it seems as if there is a positive correlation between occupational stress and locus of control. The findings suggest that internals are more likely to experience lower levels of stress, because they believe that they have better control over their reinforcements and they tend to utilise their resources and information better. It seems as if individual differences or personality orientations have been found to be a predictor of behaviour in the organisation. Occupational stress does not only occur from work pressure, but personal, emotional and behavioural characteristics could influence one's level of stress, which in turn, has an even greater effect on the employee's work outcomes.

The first part of the first research aim has now been achieved, namely to conceptualise the construct of *occupational stress* and *locus of control* from a theoretical perspective.

Chapter 3 discusses the nature of the nurse's work in order to provide further insight into and an understanding of their environment.

THE NATURE OF A NURSE'S WORK

3.1 INTRODUCTION

The significant influence of stress in the workplace has been increasingly recognised during the past two decades (Lee, 2003; Gellis, 2002; Tully, 2004). Stress affects nurses across the globe (Kane, 2009; Kirkcaldy & Martin, 2000). One of the major stressors identified in literature is the nurse's work environment and the nature of his/her work (Hughes, 2008). Nurses generally provide bedside assistance to patients, which include taking the patient's vital signs such as blood pressure, temperature and respiration and his/her pulse. They furthermore prepare and give injections, monitor catheters, clean wounds and apply dressing, treat bedsores and give alcohol rubs and massages. They have to monitor their patients on a continuous basis and report adverse reactions to the medication and treatments, they collect samples for testing and perform the routine laboratory test, they need to feed the patients and record their food and fluid intake and output. Nurses furthermore have to ensure that their patients are comfortable, before they assist them with bathing, dressing and personal hygiene. A nurse's work environment therefore involves excessive noise, sudden change of tasks (from basic care to emergencies), no second chances, unpleasant sights, sounds and death.

Nurses are trained to deal with these duties and elements (Kane, 2009), but occupational stress takes its toll when the nurses do not have the necessary skills, competence and knowledge to deal with the pressures of the work environment, the doctors, patients and their families. Therefore, in the South African context, potential nurses have to enter an extensive training programme, which allows them to provide quality patient care.

It is therefore important to identify the extent and sources of stress in a healthcare environment, in order to assist the nurse and the organisation in preventing these negative influences. Various nursing stressors have been identified in previous research studies, which include stressors associated with workload, death and dying, inadequate training, lack of managerial and supervisor support, conflict with doctors, nurses and supervisors, poor family dynamics at home, the reality of practice for graduate nurses, meeting the patients' and their own needs, patient suffering, absence of response, repetitive problems, time pressures and constantly being pulled in different directions (Evans *et al.*, 2008). Because

nursing is widely perceived to be one of the most inherently stressful occupations (Kirkcaldy & Martin, 2000), nurses and the organisation often experience increases in absenteeism, decreased productivity, a high turnover and these affect the employee's health and quality of life (Gellis, 2002).

In this chapter, the nature of a nurse's work environment will be discussed; as well as the sources and consequences of stress, which cause him/her to experience difficulty in performing his/her tasks and duties. The researcher will provide a definition of a nurse from a literature and institutional point of view; as well as classify nurses into different categories in terms of the South African Nursing Act (2005). Training and developmental requirements and competencies will be discussed; as well as the geographical distribution of nurses in the Gauteng province and in South Africa.

The sources of stress will be classified into three categories, namely (1) organisational conditions, (2) environmental conditions, and (3) other stressors; and the consequences will be discussed in terms of (1) individual and (2) organisational consequences.

This chapter will moreover discuss the second research aim as discussed in Chapter 1; namely to analyse and investigate the nature of nurses' work; and to determine the sources of stress and how they influences the nurses' working and personal lives.

3.2 DEFINING THE CONCEPT *NURSES*

The concept *nurses* has been debated since the time of Florence Nightingale; and a single brief definition has ever since not been standardised (Younge, Van Niekerk & Mogotlane, 2004). The nursing definition continuously changes to meet the needs and circumstances of different groups, in different countries at particular periods in time.

In this section the concept *nurse* will be defined, in order to understand its origin and significance in the work environment.

The word *nurse* was originally derived from the Latin word *nutrix* or *nutricis*, which means "someone who tended or nourished the young, sick or infirm" (Younge *et al.*, 2004). The word *nutrix*, more specifically, means "the nursing mother"; often referring to a wet nurse, in other words, a woman who breast-fed the babies of others (Donahue, 1996). The French term *nourrice* also referred to a woman who suckled a child (Donahue, 1996). The original

meaning of the English word was the same and the term was first used in the thirteenth-century and its spelling underwent many forms, for instance, *norrice*, *nurice* or *nourice*, to the present, *nurse*. Today, the existing definition of the word is much wider than simply nurturing.

Florence Nightingale, a pioneer of woman's nursing (Zemlicka & Knudsen, 2002) and a famous nurse who spent her life trying to improve medical standards (Davis, 2005), was the first to define nursing in the 1860s. Nightingale defined *nursing* as: "the act of utilising the environment of the patient to assist him in his recovery" (Younge *et al.*, 2004:9). Hence, Tomey and Alligood (2006:14), define a *nurse* as a "healthcare professional who, in collaboration with other members of the healthcare team, is responsible for the treatment, safety and recovery of acute and chronically ill patients, health promotion and the maintenance within families, communities and populations". Nurses, furthermore, provide a wide range of clinical and non-clinical functions which are necessary for the delivery of patient care, and they may also participate in medical and nursing research (Pandey, 2007).

Virginia Henderson wrote one of the most widely accepted definitions of *nursing* of this era (Nickitas, Middaugh, & Aries, 2010). She defined *nursing* as "the unique function [of the nurse] to assist the individual, sick or well, in the performance of those activities contributing to health or its recovery, that would perform unaided if he had the necessary strength, will or knowledge. And to do this in such a way as to help him gain independence as rapidly as possible" (Daley, Speedy & Jackson, 2006:5). *Nursing* is therefore defined as the service to an individual to help him/her attain or maintain a healthy state of mind and/or body.

Another important definition was added by Hildegard Peplau in 1952. She focused on the interpersonal terms and defined *nursing* as: "the goals of nursing are currently in transition; its major concerns fifty years ago had to do with getting sick people well. Today nursing is more concerned with the ways of helping people to stay well" (Nickitas, *et al.*, 2010:78). Nursing theories were furthermore developed to refine the definition of nursing.

In the 1960s and 1970s nursing was gender-specific, as it was viewed as an appropriate career choice for women, but offered no potential for achievement, growth and development (Daley *et al.*, 2006). It was also a profession that attracted people motivated by selflessness and the desire to make a difference to people suffering because of an illness and/or disadvantage. In the 1970s, nursing made an attempt to focus on health promotion, and has developed a greater emphasis on the construction of nursing knowledge and in the conceptualisation of practice (Daley, *et al.*, 2006). This phenomenon continued throughout

the 1980s and 1990s. Currently, the concept of *nursing* is more focused on the nurse-patient relationship or the therapeutic alliance, which is now characterised as emotional labour (Grey, 2009). From the definitions above, one could see that nursing has moved from merely providing services to patients, to caring for them.

Various institutions and councils developed their own definitions of *nursing*. These definitions are:

- **The South African Nursing Council** defines *nursing* as: “a human clinical health science that constitutes the body of knowledge for the practice of persons, registered or enrolled under the Nursing Act as nurses or midwife” (Younge *et al.*, 2004). Within the parameters of the nursing philosophy and ethics, it is concerned with the development of knowledge for the nursing diagnosis, treatment and personalised healthcare of people exposed to, suffering, or recovering from physical or mental ill health. Nursing furthermore includes the knowledge of preventive, promotive, curative and rehabilitative healthcare for individuals, families, groups and communities and covers a person’s life span from before birth.

- **The Nursing Act (2005)** defines a nurse as: “a person registered under Section 31(1) who practises nursing or midwifery” (Van der Merwe, 2003). In other words, an individual may not practise as a qualified practitioner unless he/she is registered, in terms of the Nursing Act, under one of the following categories:
 - (a) professional nurse;
 - (b) midwife;
 - (c) staff nurse;
 - (d) auxiliary nurse; or
 - (e) auxiliary midwife.

- **The Department of Health** further states that *nursing* is “a practice in which a nurse assists the individual, sick or well, in the performance of those activities contributing to health or its recovery (or a peaceful death) that he would perform unaided if he had the necessary strength, will or knowledge. And to do this in such a way as to help the patient gain independence as rapidly as possible” (Department of Health, 2010).

- **The American Nurses Association (ANA)** defines *nursing* as: “the protection, promotion and optimization of health and abilities prevention of illness and injury, alleviation and suffering through the diagnosis and treatment of human conditions” (Nickitas, *et al.*, 2010: 78). Nurses furthermore focus on caring for individuals, families, communities and populations.
- **The International Council of Nurses** (2010) further defines nursing as: “the autonomous and collaborative care of individuals of all ages, families, groups and communities; sick or well and in all settings. Nursing includes the promotion of health, prevention of illness and the care of ill, disabled and dying people. Advocacy promotion of a safe environment, research, participation in shaping health policies and patient and health systems management, and education are also key nursing roles”. A *nurse* is thus an individual who has acquired a knowledge base, multifaceted decision-making skills and clinical competencies for expanded practice. These characteristics are furthermore shaped by the context and/or country in which he/she is currently residing (Schober & Affara, 2006).

Nursing is therefore sensitive to the country’s prevailing politics and legislation, national health problems and economic and educational restraints (Younge, *et al.*, 2004). The image of nursing, whether from an economic or status perspective, attracts potential students or turns them away from nursing as a career.

In summary, a *nurse* is an individual with one or two years of tertiary education; who works with other healthcare professionals such as doctors, counsellors and therapists (Buppert, 2011), in order to care for individuals of all ages, families, groups and communities, which are ill in all settings (Daley *et al.*, 2006). Nursing furthermore includes the promotion of health, the prevention of illness and the care of ill, disabled and dying individuals.

3.3 OCCUPATIONAL CLASSIFICATION OF NURSES

According to the Nursing Act (2005), nurses are classified as one of the following:

3.3.1 Registered nurse (professional nurse)

Registered nurses perform a wide range of duties, which include assessing patients’ health problems and needs, developing and implementing nursing care plans, and maintaining

medical records (ONet Online, 2010a). Registered nurses furthermore administer nursing care to ill, injured, and disabled patients. When they provide direct care to a patient, they would typically observe, assess and record symptoms, reactions and the progress of the patient (Career Overview, 2010). They assist doctors and physicians during surgeries, treatment and examinations, administer medications and assist in rehabilitation (Bureau of Labour Statistics, 2010). They may advise patients on maintaining their health and preventing diseases; in so doing educating the patient and their families about various medical conditions, and providing assistance and emotional support to the patients and his/her family members.

A registered nurse furthermore has the option to specialise in areas of healthcare which are related to a particular condition, area of the body and a certain type of person, for example children (Onet Online, 2010a).

3.3.2 Nurse midwife

A nurse midwife is an advanced practice nurse (Explore Health Careers, 2010) who generally provide advance nursing care to obstetrical and gynaecological patients (Education-Portal, 2010; ONet Online, 2010b). Their duties generally include providing prenatal, intrapartum, postpartum, or new-born care to patients; documenting of information in medical records; consulting with patients and referring them to appropriate specialists when the conditions exceed the capabilities and expertise of the nurse; performing physical examinations by taking vital signs, conducting monograms and performing pelvic examination. The nurse furthermore has to monitor the fetus's development by listening to its heart rate, taking external urine measurements and determining the fetal position. From these functions, the nurse has to determine the size and weight of the fetus. In summary, the nurse has to provide basic healthcare to the woman, which includes pregnancy and childcare (ONet Online, 2010b).

3.3.3 Staff nurse

Staff nurses form the largest group of nurses (Career Overview, 2010) who generally provide bedside nursing care and perform medical routines. A staff nurse's responsibilities furthermore include assessing patients' health problems and needs, developing and implementing nursing care plans, and maintaining medical records (Career Overview, 2010).

In addition, they have to provide nursing care to ill, injured, convalescent or disabled patients and advice patients on health maintenance and disease prevention.

3.3.4 Auxiliary nurse

According to the South African Nursing Act (2005), an *auxiliary nurse* is a person who is skilled to provide elementary nursing care. Nurses also provide services to patients in a hospital under the supervision of a physician or professional nurse. Their duties include: taking a patient's temperature, pulse and respiration rates; and prescribes prescription medicine (Career Overview, 2010). They furthermore prepare patients for examinations and assist nursing and medical staff in other ways.

3.3.5 Auxiliary midwife

An *auxiliary midwife* provides similar services as an auxiliary nurse, but their specialisation is gynaecological care of pregnant woman.

Apart from the main classification, the nursing profession could furthermore include a certified nurse assistant, public health nurse, licensed practical nurse, nurse practitioner and a certified registered nurse anaesthetist (Bureau of Labour Statistics, 2010). In order to be classified as a registered nurse, individuals enter an extensive training and development programme.

3.4 TRAINING AND DEVELOPMENT

In order to become a registered nurse, midwife, staff nurse, and auxiliary- nurse or midwife, one has to complete a one-year course leading to enrolment as an enrolled nursing auxiliary; a two-year course leading to enrolment as an enrolled nurse and a four-year diploma or degree leading to registration as a nurse (general, community, psychiatry) and a midwife (Department of Health, 2010). Students graduating from this programme qualify as registered nurses.

The following programmes are offered in South Africa (Mekwa, 2000):

- a post-basic degree programme, leading to specialisation in nursing education, nursing administration and community health nursing in combinations of two or three qualifications. The undergraduate nursing training programme, which is currently offered,

is known as a Bachelor of Nursing Science (BCur), which is a four-year full-time study course (Department of Health, 2010);

- post-basic diplomas, which can include a variety of single diploma qualifications in the above fields or any of the disciplines in the comprehensive four-year programme;
- supplementary basic diplomas;
- post-basic certificates; and
- honours and master's degrees, for which the student may enrol once the basic degree programmes have been completed.

After completing a four-year study course, from either a university or college, students graduate as a professional nurse. The main difference between a degree and diploma is the academic level at which the student completes his/her studies; for example, with a BCur degree the graduate will have an advantage when it comes to career development and specialising in a certain field of nursing (Department of Health, 2010). However, a bridging course is available for students who would progress towards a qualification at a degree level. The nursing programmes should however be accredited by the South African Nursing Council (SANC) (Younge *et al.*, 2004).

After graduation, the new nurses are required to complete a one-year remunerated community service at a public healthcare facility before entering the workforce (Burch & Reid, 2011). This programme requires health professionals to work for the government; there is thus little or no opportunity for private or non-governmental practice (Frehywot, Mullan, Payne & Ross, 2010). The new nurses are consequently placed anywhere in the country, based on community needs.

All students must apply to the SANC for registration as a learner nurse or midwife at commencement of their studies (Department of Health, 2010). After graduation, the education institution is obliged to send the student's certificate of completion to the SANC to inform them that the student has completed the training course. Registration or enrolment is a prerequisite for practising nursing in South Africa; thus no registered nurse, midwife, enrolled nurse, nursing auxiliary, student nurse, pupil nurse or pupil auxiliary nurse may practise nursing or midwifery without being registered or enrolled with the council (Younge *et al.*, 2004).

The South African Nursing Council (SANC) is a regulatory nursing body that is mandated to promote and maintain the standards of nursing in South Africa (Mekwa, 2000). It is an

accredited education and training quality assurance body (ETQA) and is responsible for the quality assurance of nursing education and training (Department of Health, 2010). The SANC is furthermore responsible for the following (SANC, 2010a):

- advancing the health and well-being standards of the South African population;
- ensuring that matters which affect the training and education of nurses are controlled and the necessary authority are executed;
- ensuring that the manner in which nurses practice are controlled and managed appropriately;
- advising the Minister of Health on matters which are regulated in terms of the scope of the Nursing Act (2005); and
- providing continuous support and assistance to the nurses in the event of amendments to the Nursing Act (2005).

The SANC is furthermore obliged to remove a name from the register in the following circumstances (Younge *et al.*, 2004):

- absence from the Republic and failure to pay the prescribed subscription fee for a period of three years;
- failure to report a change of address;
- by request on the part of an individual nurse;
- removal of a nurse's name from the register, record or roll of a university, hospital, college or any other body from which the qualification was obtained; and
- failure to pay annual registration fees.

The registrar will inform the individual in writing that his/her name has been removed from the registrar or roll. This indicates that the registration or enrolment has been cancelled and that the person may no longer practise nursing.

In summary, in order to become a qualified enrolled registered nurse, individuals have to enter an extensive training programme, complete a one year internship at a public healthcare facility, register at the South African Nursing Council and adhere to the various rules and regulations, maintain ethical healthcare practices and practise according to the desired standards set out by the SANC and Nursing Act (2005).

3.5 COMPETENCY FRAMEWORK FOR NURSES

In order for nurses to practise in a hospital environment and to take care of patients they need to possess certain skills and competencies. The term *competencies* and the competencies that a nurse needs to possess are discussed in this section.

Nursing competencies have been described well in health literature over the past decade (Kalb *et al.*, 2006) These competencies form an integral part of nurses' job description. According to Jooste and Jasper (2010), *competencies* are the specific elements of practice that contribute to overall competence. A *competence* is therefore defined as an individual core competency, which refers to the essential knowledge, skills and abilities that a person requires to perform a certain task (Black, *et al.*, 2008). Tzeng and Ketefian (2002) further state that *competence*, *competency* and *competencies* are used in to describe various skills that are required in a nurse's performance, which generally include quality of care and productivity. *Nursing competencies* are consequently defined as "personal skills developed through professional training courses, which are eventually the outcome of this education" (Tzeng & Ketefian, 2002:510).

A nurse therefore has to have the capability to integrate and apply the knowledge, skills, judgement and personal attributes required to practise with the necessary care according to health and safety standards and according to the ethical considerations prescribed by the nursing sector (Black *et al.*, 2008). Previous studies have classified nursing skills into the following dimensions: nurturing and caring for patients, knowledge of the nursing process and procedures, interpersonal relationships and teamwork, communication and leadership skills, the ability to set priorities, conduct research and execute the plan (Tzeng & Ketefian, 2002). Watt and De Almeida (2008) state that nursing competencies should include professional values, communication, team work, management, community orientation, problem-solving, and basic healthcare sciences. Tzeng and Ketefian (2002) furthermore found that interpersonal skills/emotional intelligence and interprofessional communication are key competencies necessary in nursing performance development.

Competencies are therefore necessary to enable registered nurses to practise with the required ability, according to the health and safety and ethical regulations, with patients of all ages and genders (Black *et al.*, 2008). The International Nurses Council (2010), states that competencies may:

- serve as a framework for nursing education programmes. The framework can indicate what is expected of entry-level nurses;
- provide guidelines to educators in order for them to develop the nursing curricula;
- serve as a tool for formulating practice standards;
- increase awareness of what is expected of entry-level nurses, from an employer and citizen's point of view;
- increase the nurse's movement and adaptability to a different study and work environment;
- assist with the development of definitions in terms of the clinical, nursing and hospital environment;
- assist in the development and clarification of the nurse's role and responsibilities; and
- increase partnerships and communication nationally as well as internationally.

In summary, nurses are required to possess the experience to understand the working principles of equipment and based on the information revealed on the monitors make decisions quickly, accurately and often independently in terms of the condition of the patient. A nurse may have advance knowledge, clinical skills and experience in order to provide optimal patient care. If a nurse does not have the necessary skills and knowledge in caring for patients, the environment may become extremely stressful.

3.6 GEOGRAPHICAL DISTRIBUTION OF NURSES

According to the geographical distribution statistics released by the South African Nursing Council (SANC, 2010b) in 2010, the nursing manpower of Gauteng, South Africa, is displayed in Table 3.1.

Table 3.1: Geographical distribution of nurses in Gauteng (2010)

Gauteng	Population 2010	Nursing manpower as at 2010/12/31				In training as at 2010/12/31	
		Registered	Enrolled	Auxiliaries	Total	Students	Pupils
Females	5 597 000	28 494	12 112	15 571	56 177	3 994	6 033
Males	5 594 700	1 569	894	1 096	3 559	845	515
Total	11 191 700	30 063	13 006	16 667	59 736	4 839	6 548

Source: South African Nursing Council (2010b:1)

According to the 2010 statistics, there were 11 191 700 individuals in the Gauteng province, of which 5 597 000 were females and 5 594 700 were males. Of the 5 597 000 females, only 28 494 were registered nurses, 12 112 were enrolled and 15 571 were auxiliaries. In

contrast, of the 5 594 700 males in Gauteng, 1 569 were registered nurses, 894 were enrolled and 1 096 were auxiliaries. In total, the nursing manpower at the end of December 2010 in Gauteng were 59 736; of which 56 177 were female and 3 559 male. This indicates that for the Gauteng province, 1% of the females and 0.06% of the males practise nursing as a profession; this is 0.53% in the whole of Gauteng.

In a population of 11 191 700, one nurse is thus responsible for 187 patients.

Table 3.2 is a summary of the nursing manpower in South Africa at the end of 2010.

Table 3.2: Geographical distribution of nurses in South Africa (2010)

South Africa	Population 2010	Nursing manpower as at 2010/12/31				In training as at 2010/12/31	
		Registered	Enrolled	Auxiliaries	Total	Students	Pupils
Females	25 662 300	107 029	47 830	57 713	212 572	15 406	15 123
Males	24 329 000	8 215	4 540	5 759	18 514	4 372	1 713
Total	49 991 300	115 244	52 370	63 472	231 086	19 778	16 836

Source: South African Nursing Council (2010b:1)

According to the 2010 statistics, South Africa had a population of 49 991 300 individuals, of which 25 662 300 were female and 24 329 000 were male. Of the 25 662 300 females, only 107 029 were registered nurses, 47 830 were enrolled and 57 713 are auxiliaries. In contrast, of the 24 329 000 males in South Africa, 8 215 were registered nurses, 4 540 were enrolled and 5 759 were auxiliaries. In total, the nursing manpower at the end of December 2010 in South Africa were 231 086; of which 212 572 were female and 18 514 male. This indicates that in South Africa, 0.83 % of the females and 0.07% of the males practise nursing as a profession; this is 0.46% in the whole of South Africa.

In a population of 49 991 300, one nurse is thus responsible for 216 patients.

Table 3.3 provides the geographical distribution of nurses in South Africa at the end of 2009.

Table 3.3: Geographical distribution of nurses in South Africa (2009)

South Africa	Population 2010	Nursing manpower as at 2010/12/31				In training as at 2010/12/31	
		Registered	Enrolled	Auxiliaries	Total	Students	Pupils
Females	25 451 800	103 848	44 012	56 842	204 702	13 342	11 733
Males	23 868 700	7 451	4 066	5 598	17 115	3 825	1 319
Total	49 320 500	111 299	48 078	62 440	221 817	17 167	13 052

Source: South African Nursing Council (2010b:1)

Compared with the 2010 results, it seems as if the number of nurses are increasing (from 221 817 to 231 086; 4% increase), nevertheless so is the population (49 320 500 to 49 991 300; 1.34% increase). In 2009, one nurse was responsible for 222 patients. Thus, there are still not enough nurses to care for a population of 49 991 300.

3.7 THE NATURE OF NURSES' WORK

Nurses generally work in hospitals, old-age homes, clinics, schools, rehabilitation centres, mental health institutions, the military and industrial and corporate sites (Health Career Centre, 2010). The majority of nurses work in a well-lit, comfortable healthcare facility, where they spend a substantial amount of time walking, bending, stretching, and standing (Mangaoang, 2011). Patients in a hospital environment require 24-hour care; therefore nurses are required to work nights, weekends and on public holidays (Bureau of Labour Statistics, 2010). They may furthermore be on call (available to work on short notice).

Nurses' duties include, the treatment and education of patients and the public about medical conditions (Onet Online, 2010a), recording patients' history and symptoms, assisting with conducting diagnostic tests and analysing the results, providing feedback, advice and emotional support to the patient and the patient's family members, administering treatment and medicine to the patients, arranging a follow-up visit and/or rehabilitation (Bureau of Labour Statistics, 2010). The nurse furthermore needs to be able to operate the machinery and equipment.

When caring for patients, nurses are required to draft a care plan or contribute to an existing plan. The plans may include various activities such as administering medication, which include the verification of the dosages and avoiding interactions. Nurses have to start, maintain and cease the intravenous (IV) lines for fluid, medication, blood and blood products (Bureau of Labour Statistics, 2010). They furthermore have to observe the patient, record their observations, and provide feedback to their doctors and physicians.

Nurses are generally in close contact with patients who are diagnosed with infectious diseases; they furthermore have to work with toxic and potentially hazardous or harmful compounds, medications and solutions (Health Guide USA, 2010). They have to apply strict guidelines to guard the patient, and himself/herself, against diseases and other dangers, for example: radiation, accidental needle perforation, chemicals and anaesthetics.

Nurses are at a high risk for illness, emotional exhaustion and musculoskeletal injuries (Mangaoang, 2011). Nurses may experience both physical and mental illness and injuries (McGillis Hall, 2005). These illnesses and injuries might be due to the nurses' work environment; according to Kane (2009), nurses' work environment generally includes, an enclosed atmosphere, where there is excessive noise or gratuitous quiet, time pressures, no second chances, sudden swings from intense to ordinary tasks, which might include unpleasant sounds and sights, and long working and standing hours. Nurses work long hours with few breaks and often have little time for recovery between the shifts (Rogers, Hwang, Scott, Aiken & Dinges, 2004). Scheduled shifts may be between eight, 12 or 16 hours; and may be categorised as a day, evening and night shift. Rogers (in Ellis, 2008) found that long shifts might be from 7 am to 7 pm and 7 pm to 7 am; some shifts were from 3 am to 3 pm. Some nurses' shifts are between 20 and 24 hours long (Ellis, 2008).

Shift work generally disturbs the individual's natural circadian rhythm which will cause the nurse to experience a lack of sleep which will decrease his/her efficiency (Chung, Chang, Yang, Kuo & Hsu, 2007). Sources of stress brought on by shift work include occupational stressors, non-occupational stressors and personal factors. These stressors will be discussed in the next section.

3.8 SOURCES OF STRESS AMONG NURSES

Extensive research has been undertaken on occupational stress in the nursing sector over the past two decades. Various studies were published since the 1990s and it is still a growing area of research in the nursing profession (Evans *et al.*, 2008).

Occupational stress among healthcare professionals is a major concern in the healthcare industry (Aucamp, 2003; French & Cur, 2008; Naudé & Rothmann, 2006; Piko, 1999; Van der Colff, 2005); because nursing is considered inherently stressful (Beau, 2006; Bégat, Ellefsen & Severinsson, 2005; Van der Colff & Rothmann, 2008). Every day a nurse confronts severe suffering, constant interaction with patients, uncertainty about the illness outcomes, demoralising situations when patients do not get better despite the nurses and doctors best efforts, and having to deal with distraught families (Beau, 2006; Van der Colff, 2005). These are only some of the stressors that nurses experience on a daily basis. In this section, the stressors that nurses face on a daily basis are discussed.

A *stressor* is anything that leads to a stress response or disrupts the equilibrium of an individual (Beau, 2006). The individual thus becomes the recipient of the stressor (Evans *et al.*, 2008). According to Gelsema, *et al.*, (2006), job stressors are classified according to environmental conditions and organisational conditions, and both have an impact on the health and well-being of nurses. *Occupational conditions* are described as the method of structuring and managing the work; and *environmental conditions* refer to the physical work environment such as the layout of the workplace, equipment and technology. The method of the work structure contributes to a nurse's occupational stress.

Therefore, the stressors that nurses experience will be classified as (1) organisational conditions (job demands), (2) environmental conditions (work environment) and (3) other stressors. Each of these stressors will be discussed accordingly.

3.8.1 Organisational conditions

Organisational conditions are stressors which affect the structure of the nurse's work. These stressors include the nurse's workload and job demand, interpersonal relationships, autonomy and decision-making, the organisational structure and administrative duties.

According to Wall (2010), workload and the availability of resources have been found to be a key determinant of nurses' perceptions of work stress. Evans *et al.*, (2008) furthermore found that workload was a major stressor in a large number of studies that were examined and generally include items such as a shortage of staff, too many tasks that require the attention of the nurse, which are not part of his/her nursing tasks, administrative functions, time constraints, working at a stressful work tempo (Sellgren, Kajermo, Ekvall & Tomson, 2008), and technology problems. Inadequate resources, such as staffing, equipment, technology, and supplies can aggravate nurses, which will interfere with the quality of their working lives (Wall, 2010).

Work/job demands, such as workload, dealing with life and death situations, daily dilemmas and strict time pressures, have been associated with emotional exhaustion, depression, health problems and decreased job satisfaction (Gelsema *et al.*, 2006). Job demands, together with diminished job control and support from supervisors and colleagues were furthermore associated with health problems and burnout (Gelsema *et al.*, 2006). Interpersonal relationships or social support therefore determines the quality of a nurse's working life (Wall, 2010).

The environment, leadership and the organisational structure furthermore influence the stress level that nurses experience (Wall, 2010). Characteristics of the organisational structure (for example, unit characteristics, such as the size and skills of the staff) and access to support services, resources and care delivery models have been associated with autonomy and job satisfaction in the nursing sector (Wall, 2010). According to Hughes and Carolyn (2009), autonomy has been a personal goal for nurses for some time. In the nursing profession *autonomy* is defined as “the belief in the centrality of the patient when making responsible discretionary decisions, both independently and interdependently, and identifies critical attributes which include caring, relationships with patients, responsible discretionary decision making, collegial interdependence and proactive advocacy on behalf of the patient” (Hughes & Carolyn, 2009). Wall (2010) found that autonomy is a crucial characteristic of an attractive nursing environment. The importance of autonomy for nurses has been acknowledged in several research studies and was furthermore linked to organisational commitment, occupational stress and task significance (Wall, 2010). Nurses generally have limited power with regard to decisions relating to working conditions, but nurses have moderate informal power in order to participate in decisions which relate to care-giving practices. Hughes and Carolyn (2009) therefore identified decision-making as a stressor for nurses.

Wall (2010) further found that autonomy is linked to the nurse’s knowledge. Some nurses have no apparent knowledge base when it comes to managing the patient’s medical treatment. This causes nurses to feel pressurised and experience some level of stress, because they are unsure of what to do next in a particular situation. Hughes and Carolyn (2009) moreover state that the education that nurses receive at tertiary level is not adequate when compared with the actual work environment. The education they receive tends to be broad and reflects only the theory associated with nursing. Nurses are required to provide care to patients, but due to a lack of proper education and training, they might not be able to do so adequately.

Everything in nursing and healthcare is complex; there are complex care procedures, technologies, patient needs and responses to therapeutic interventions (Hughes & Carolyn, 2009). Factors such as the disease process itself, doctors and physicians, equipment and technology, policies and procedures, and resources place a large amount of stress on those who provides care at the patient’s bedside; and if a nurse does not have the necessary skills, knowledge and abilities to provide these duties, the stress levels will increase even more.

Another stressor to take into consideration is “working rotational shifts” (Beau, 2006). Nurses generally work between eight- and 12 hour shifts daily; these are perceived as exhausting and cause the nurse’s biorhythm to take several days (or weeks) to adjust to the shift change. This imbalance furthermore causes the nurse to loose valuable sleep, which affects his/her work efficiency (Dorrain, *et al.*, 2006). Stressors brought on by the shift system are occupational stressors, which include working shifts and the nurse’s workload, personal factors, such as the age and gender of the nurse, and non-occupational stressors, for example, the level of stress in daily living (Chung *et al.*, 2007).

Nurses generally work long hours and their work is physically, physiologically and psychologically demanding (McCarthy, Power & Greinder, 2010); however, these employees receive inadequate or no rewards and promotions, their salaries are insufficient and there is a general lack of study possibilities (Beau, 2006; Callaghan, Tak-Ying & Wyatt, 2000).

In this section the organisational conditions which cause occupational stress in nurses were discussed. In summary, the following organisational stressors were identified: (1) workload, (2) inadequate resources, (3) lack of job control and non-nursing duties, (4) social support and interpersonal relationships, (5) leadership and relationships with supervisors, (6) organisational structure, (7) autonomy, (8) decision-making, (9) lack of knowledge and skills, (10) working shifts, overtime and long hours, and (11) rewards, remuneration and promotion.

In the next section, the environmental conditions will be discussed.

3.8.2 Environmental conditions

The term refers to stressors that affect the physical working environment or conditions of the nurse. These stressors include taking care of ill patients, HIV/aids, and death and dying, equipment and technology, and reduced staffing levels (shortage). In this section, these stressors will be discussed accordingly.

As mentioned in the previous section, it is important for nurses to have an effective support system in place, since they work with critically ill patients for a prolonged period of time; some with poor progress, and they have to attend to the patient’s emotionally disturbed family and friends (Beau, 2006). Caring for the patient creates a stressful environment for the nurse; as he/she needs to lift the heavy, unresponsive patients, some which are wasted and mutilated because of their illness; the purulent discharges from wounds, dressing soaked in

blood, and attend to excretions of urine and faeces as a result of incontinence related to the patient's disease (Beau, 2006).

Healthcare workers are to an increasing extent becoming engaged in caring for people with HIV/aids; and they tend to be in regular prolonged contact with such patients. According to Smit (2005), due to the fact that no adequate cure or vaccine is available for HIV/aids, nursing care involves providing extensive physical care and rendering emotional support to patients who suffer from HIV/aids. Studies have furthermore found that because of the demanding nature of caring for patients diagnosed with HIV/aids, these nurses tend to experience occupational stress, fatigue and eventually burnout (Smit, 2005).

The nurse's stress level may further increase due to a fear of becoming infected with the HIV virus. The virus might be transmitted through accidental injury and/or exposure to HIV-infected bodily fluids (Smit, 2005). Insufficient HIV/aids training might also cause the nurse to experience stress, because he/she will not have the necessary skills and experience to care for an aids patient (Delobelle, *et al.*, 2009). In a study conducted by Shisana, Hall, Maluleke, Chauveau and Schwabe (2004), on the impact of HIV/aids on the healthcare sector in South Africa, nearly half of the respondents indicated that HIV/aids had an impact on their work, which, in turn, affected the quality of patient care.

Nurses furthermore provide care to dying patients (Cole, Slocumb & Mastey, 2001; Gelsema *et al.*, 2006; Watson, *et al.*, 2008). Cole *et al.* (2001) found that stress which is associated with death contributes to burnout. Cole *et al.* furthermore concluded that the intensity of the stressor, rather than the frequency, is a major contributor to the level of stress. In summary, according to Cole's findings, a patient's death might have a greater effect on a nurse's level of stress, than merrily caring for other acutely ill patients.

Another stressor affecting the nurse is the fact that he/she might feel responsible for causing the patient's death (Hopkinson, Hallett & Luker, 2003). In other words, the nurse might feel that he/she made a mistake or error that caused the patient's death. The nurse might furthermore feel like a failure and powerless because he/she was unable to save a life; this might be due to the fact that there were limited or no support from the nurse's supervisor and/or co-workers and unrealistic expectations from the patient's family members, which only increases the pressure, time constraints and a fear of losing control over the situation (Cole *et al.*, 2001). The nurse generally does not have time to sympathise and express his/her feelings about the resuscitation, which also increases the level of stress.

Machinery and technology in the hospital furthermore cause a nurse to experience stress. According to Beau (2006), the constant noise made by machinery might cause the nurse to become agitated and experience some level of stress. Noises made by machinery include the beeping and buzzing sound from monitors and ventilators, the gurgling sound of the suction machines, and the continuously ringing telephones – some with calls from the patient's family who want to enquire regarding the condition of their loved one, others from the X-ray department who wants to find out if the time is conducive to take the patient's image. Technological problems such as computer and machine breakdowns might have an influence on the nurse's stress level (Evans *et al.*, 2008). From the literature reviewed, it seems as if the machinery and technology cause more frustration and irritableness than stress; because these result in higher job demands and workload stress.

Another stressor in the environment is the operating room (OR). According to Chen, Lin, Wang and Hou (2009), the OR is one of the most stimulating and yet challenging hospital units in which nurses work. Characteristics which cause nurses to experience anxiety or pressure in the OR include (1) the need to function at an increased pace, (2) to cope with advanced medical risks, (3) to work uncertain, long shifts, (4) to work with precision instruments and (5) to learn and execute complex techniques. Donevic, Romelsjo and Theorell (1998), and Xianyu and Lambert (2006), state that the perception of occupational stress at work may vary according to the unit or department in which the nurse works. For example nurses who work in paediatric departments, emergency room and intensive care units (ICUs) experience higher levels of stress.

Finally, the nursing shortage in South Africa is another stressor to nurses. According to Adams (2009), the nursing shortage in South Africa is a major problem in hospitals, which is mainly due to the large number of nurses who have left the country to work abroad for better working conditions as well as better remuneration packages. The shortage of nurses and high staff turnover compromises the nurse's ability to provide competent and compassionate care (Bégat *et al.*, 2005), which, in turn results in increased pressure and stress.

The last 30 years have also seen a considerable increase in the range of alternative career opportunities for women (Shields, 2004). The supply of nurses will continue to decline, because of the improved career opportunities which are available to women. Another factor is the fact that a large proportion of qualified nurses are about to retire; and these nurses will most likely spend more time with their families towards the end, rather than on their careers

(Van den Heede, Diya, Lesaffre, Vleugels & Sermeus, 2008). Workload is thus the result of this stressor.

In this section, the environmental conditions that cause occupational stress in nurses were discussed. In summary, the following stressors were identified: (1) critical ill patients and caring for them, (2) HIV/aids, (3) death and dying patients, (4) machinery (equipment) and technology, (5) the operating room, and (6) the nursing shortage.

In the next section, “other” stressors will be discussed.

3.8.3 Other stressors

In this section, the other conditions that influence the nurse’s occupational stress levels will be discussed. These stressors include the nurse’s personality and years of experience, and workplace violence.

Hughes (2008) found that nurses’ personality was explored in a number of investigations to determine whether burnout and work stress is a result thereof. The findings generally are that the perceptions of occupational stress and burnout are not as a result of their work conditions, because not all workers who are exposed to the same work conditions develop burnout or occupational stress. For example, a nurse with an external locus of control tends to experience higher levels of stress and burnout than an internal. Therefore, the nurse’s personality type is a potential stressor, as it determines whether a nurse will be able to cope with the job demands, work overload and pressure.

Humpel and Caputi (2001) studied the relationship between work stress and the length of time in the nursing profession. The study found that nurses with less experience were to experience higher stress levels; and the years of experience furthermore had an influence on the staff turnover. The total years as a nurse are therefore negatively correlated with burnout, which is a psychological response to stress (Decker, 1997).

Lastly, nurses have been subject to physical, emotional and verbal abuse because of the nature of their work (Rowe & Sherlock, 2005). The sources of verbal abuse can be classified into four categories, namely (1) patients, (2) families, (3) doctors, and (4) other healthcare workers and colleagues. The abuse will most likely have a negative effect on the nurse’s self-esteem, job satisfaction, morale, productivity, patient care and professional error rates. The

abuse may furthermore cause severe psychological consequences, which include post-traumatic stress disorders, insomnia and anxiety (Camerino, Estry-Behar, Conway, Van der Heijden & Hasselhorn, 2007).

Camerino *et al.* (2007) furthermore found that the following characteristics cause abuse and violence to take place:

1. *Individual characteristics*: being young and having little or no experience, having a lower job title, having certain personality traits, alcohol and/or drug abuse, being in closer contact with the patients, extreme fatigue and acting with hostility, which may lead to an increased possibility that the patient will be more aggressive.
2. *Organisational characteristics*: some units were found to be at higher risk of abuse and violence, for example, the accident and emergency unit, and nursing homes.
3. *Psychological characteristics*: the following elements have been found to be related to workplace violence: low group climate, unfair treatment and discrimination in the organisation, lack of supervisory and managerial support, an unsafe work environment, little or no training in violence and harassment prevention and communication skills, understaffing, shift work and high workload.

In terms the characteristics described by Camerino *et al.* (2007), one could conclude that all the stressors described in the previous sections will eventually lead to abuse and violence; which, in turn, will cause the nurse to experience even more stress.

In summary, in this section, the following stressors were identified: (1) personality, (2) years of experience, and (3) physical, emotional and verbal abuse. These stressors were labelled as “other” stressors.

3.8.4 Summary

In the previous three sections, the major nursing stressors, namely organisational stressors, environmental stressors and other stressors, were identified and discussed. In this section, a summary of the major nursing stressors is provided.



Table 3.4: Sources of occupational stress among nurses

Stressor	Author / Researcher
Caring for critical ill patients	Beau (2006) Evans, Pereira and Parker (2008) Stordeur, D'hoore, & Vandenberghe (2001)
Conflict with doctors, nurses and supervisors	Beau (2006) Cole, Slocumb, & Mastey (2001) Evans, Pereira and Parker (2008) Ida, Miura, Komoda, Yakura, Mano, Hamaguchi, Yamazaki, Kato & Yamauchi (2008) Kirkcaldy & Martin (2000) Lee (2003) Muncer, Taylor, Green & McManus (2001) Watson, Gardiner, Hogston, Gibson, Stimpson, Wrate & Deary (2008) Xianyu & Lambert (2006)
Death and dying	Evans, Pereira and Parker (2008) Cole, Slocumb, & Mastey (2001) Callaghan, Tak-Ying & Wyatt (2000) Ida, Miura, Komoda, Yakura, Mano, Hamaguchi, Yamazaki, Kato & Yamauchi (2008) Lee (2003) Muncer, Taylor, Green & McManus (2001) Watson, Gardiner, Hogston, Gibson, Stimpson, Wrate & Deary (2008) Xianyu & Lambert (2006)
Education and experience	Beau (2006) Evans, Pereira and Parker (2008) Wall (2010) Humpel & Caputi (2001) Muncer, Taylor, Green & McManus (2001) Xianyu & Lambert (2006)
Equipment (machinery) and tools <i>(Includes equipment breakdowns and</i>	Beau (2006) Callaghan, Tak-Ying & Wyatt (2000)



noise)	Stordeur, D'hoore & Vandenberghe (2001) Xianyu & Lambert (2006)
HIV/aids	Delobelle, Rawlinson, Ntuli, Malatsi, Decock & Depoorter (2009) Smit (2005)
Insufficient resources	Muncer, Taylor, Green & McManus (2001) Beau (2006) Xianyu & Lambert (2006)
Lack of emotional support	Muncer, Taylor, Green & McManus (2001)
Lack of staff support	Evans, Pereira and Parker (2008) Cole, Slocumb & Mastey (2001) Stimpson, Wrate & Deary (2008) Stordeur, D'hoore & Vandenberghe (2001) Wall (2010) Watson, Gardiner, Hogston, Gibson, Xianyu & Lambert (2006)
Reduced staff levels/nursing shortage	Hamesley-Brown (1997) Lee (2003) Shamian (2003) Watson, Gardiner, Hogston, Gibson, Stimpson, Wrate & Deary (2008)
Rewards and promotions	Beau (2006) Callaghan, Tak-Ying & Wyatt (2000) Ida, Miura, Komoda, Yakura, Mano, Hamaguchi, Yamazaki, Kato & Yamauchi (2008) Stordeur, D'hoore & Vandenberghe (2001) Xianyu & Lambert (2006)
Shift work	Beau (2006) Ida, Miura, Komoda, Yakura, Mano, Hamaguchi, Yamazaki, Kato & Yamauchi (2008) Lee (2003) Muncer, Taylor, Green & McManus (2001) Rowe & Sherlock (2005)
Stressor associated with workload (job	Beau (2006)



demands)	Callaghan, Tak-Ying & Wyatt (2000) Cole, Slocumb & Mastey (2001) Evans, Pereira and Parker (2008) Gelsema, van der Doef, Maes, Janssen, Akerboom & Verhoeven (2006) Hughes & Carolyn (2009) Ida, Miura, Komoda, Yakura, Mano, Hamaguchi, Yamazaki, Kato & Yamauchi (2008) Kirkcaldy & Martin (2000) Lee (2003) Muncer, Taylor, Green & McManus (2001) Sellgren, Kajermo, Ekvall & Tomson (2008) Stordeur, D'hoore, & Vandenberghe (2001) Wall (2010) Wu, Chi, Chen, Wang and Jin (2009) Xianyu & Lambert (2006)
Structure of communication	Callaghan, Tak-Ying & Wyatt (2000) Gelsema, Van der Doef, Maes, Janssen, Akerboom & Verhoeven (2006)
Structure of the organisation	Golubic, Milosevic, Knezevic & Mustajbegovic (2009) Wall (2010)
Un-cooperative family members	Xianyu & Lambert (2006)
Verbal, emotional and physical abuse and violence	Camerino, Estryng-Behar, Conway, Van der Heijden & Hasselhorn (2007) Muncer, Taylor, Green & McManus (2001) Rowe & Sherlock (2005)
Work conditions	Callaghan, Tak-Ying & Wyatt (2000) Gelsema, Van der Doef, Maes, Janssen, Akerboom & Verhoeven (2006)

Table 3.4 is a summary of the stressors experienced by nurses on a daily basis. From Table 3.4, one could conclude that work load/job demands, death and dying, lack of support, the nursing shortage and shift work seem to cause high levels of stress among nurses.

In the next section, the consequences of these stressors will be discussed.

3.9 CONSEQUENCES OF STRESS AMONG NURSES

The stressors discussed in the previous section will not only prove dangerous to the individual's physical health and emotional well-being, but may also produce dysfunction in the organisation (Spies, 2004). It is therefore important to discuss the consequences for both the individual and the organisation.

3.9.1 Individual distress

Individual distress may lead to various consequences due to stress; such as headaches, sleep deprivation, mood and emotional disorders and decreased work ability. In this section, the consequences of individual distress will be discussed.

Excessive occupational stress has been associated with an increased risk to physical and mental health, and decreased work ability and the life quality of the individual (Wu *et al.*, 2009). Spies (2004) identified three categories under which the consequences of stress could be classified; namely (1) psychological, (2) physiological, and (3) behavioural symptoms or consequences. Psychological symptoms (mental ill health) include for example dissatisfaction at work, anxiety (Salleh *et al.*, 2008), self-conflict (Chen *et al.*, 2009), irritability, negativism, loss of ability to concentrate, emotional exhaustion (Doncevic *et al.*, 1998; Golubic *et al.*, 2009; Healy & McKay, 2000), insomnia and restlessness, fatigue (burnout) (Doncevic *et al.*, 1998; Healy & McKay, 2000; Salleh *et al.*, 2008) and eventually depression (Chen *et al.*, 2009; Salleh, *et al.*, 2008). Mann and Cowburn (2005) classify emotional exhaustion as a feeling of depression (Healy & McKay, 2000), helplessness and hopelessness; which connects occupational stress and somatic complaints, coronary heart disease, alcoholism and attempted suicide. Thus, one could conclude that one consequence leads to several extreme consequences.

Physiological symptoms include an increased heart rate and coronary heart diseases (Doncevic *et al.*, 1998), hyper tension, galvanic skin responses and respiration, ulcers, immune system suppression, musculoskeletal injuries (Shamian, 2003) such as back pain (Golubic *et al.*, 2009), an increased blood pressure or cholesterol, and adrenaline and gastric acid production. Stress-related illnesses tend to be a serious hazard to the health and well-being of nurses. These nurses are more likely to be absent, engage in more conflicting

situations with their colleagues, experience feelings of inadequacy, self-doubt and a low self-esteem and experience somatic disturbances and insomnia, all of which will jeopardise the quality of care which they provide to their patients (Callaghan *et al.*, 2000).

Lastly, behaviour symptoms include a sudden change in smoking habits (Doncevic *et al.*, 1998) and an increase in alcohol consumption, overeating, absenteeism, frequent visits to healthcare providers and suicide.

In summary, according to Van der Colff (2005), the most frequently reported consequences are (1) low energy levels, (2) feelings of lack of control, (3) helplessness, (4) low motivational levels, (5) negative attitudes towards work, self and others, (6) emotional exhaustion, (7) absenteeism and turnover, (8) performance deficits, and (9) substance abuse. Table 3.5 is furthermore a tabular representation of the individual consequences of stress, as identified by Hardy, Carson and Thomas (1998).

Table 3.5: Individual consequences of stress

Behavioural	Physical	Emotional
Short term:		
Overindulgence and reliance on smoking, drinking alcohol or drug taking	Headaches	Tiredness/Irritability
Increased risk of accidents	Backache	Anxiety
Impulsive/reactionary behaviour	Poor/disturbed sleep pattern	Boredom
Poor relationships with others at home and at work	Indigestion	Depression/mood swings
Apathy	Chest pain Nausea Dizziness	Inability to concentrate Low self-esteem
Long term		
Marital breakdown Social isolation	Heart disease Hypertension Ulcers Poor general health	Insomnia Chronic depression and anxiety Neurosis Suicide

Source: Hardy, Carson and Thomas (1998:20)

Table 3.5 is a summary of the consequences of stress experienced by individuals. In terms of the literature evaluated and Table 3.5, the individual consequences of stress could be divided into three categories, namely (1) behavioural, (2) emotional/psychological, and (3)

physiological/physical consequences; each affecting the well-being of the individual. In the next section, the organisational consequences will be discussed.

3.9.2 Organisational distress

In the previous section, the individual consequences of stress were identified. These consequences furthermore have an effect on the overall well-being of the individual and consequently the organisation. One should take note that stress is not necessarily harmful to the organisation; as moderate levels of stress can enhance performance and health (Spies, 2004), but distress (severe stress) can become harmful to an organisation.

Distress is generally associated with impaired organisational efficiency (Van der Colff & Rothmann, 2008), high staff turnover (Chen *et al.*, 2009; Doncevic *et al.*, 1998; Golubic *et al.*, 2009), sickness, absenteeism (Doncevic, *et al.*, 1998; Shamian, 2003), which result in direct costs (Spies, 2004), and occupational accident rates, counselling referrals, alcohol and drug abuse (Van der Colff & Rothmann, 2008), poor practise quality and an increase in health care costs and reduced job satisfaction (Golubic *et al.*, 2009; Tully, 2004). Spies (2004) and Van der Colff and Rothmann (2008) furthermore state that indirect costs are another consequence of stress to the organisation; these include strikes, work stoppages, accidents, unscheduled downtime, overuse of materials and supplies, inventory shrinkages, quantity and quality of services and care provided.

In summary, individual stress influences the organisational functioning and effectiveness. Distress could therefore have a severe impact on the organisation as it affects the triple bottom line, namely (1) human capital, (2) natural capital, and (3) the profit margin.

In this section, the consequences of stress were discussed, from both an individual and organisational perspective. Literature and previous research indicate that when the individual experiences stress, it leads to certain consequences which affect the organisation. Therefore, it is important to be aware of the various stressors that affect the individual, especially nurses, in order to prevent them before distress occurs. Nurses are particularly susceptible to stress, because they work in an environment which is emotionally, mentally and physically demanding.

3.10 CONCLUSION

The aim of Chapter 3 was to conceptualise the construct *nurses* from a theoretical (literature) and institutional perspective. The construct is imperative to understand the nature of nurses' work, the sources (stressors) of stress and the consequences thereof. According to the literature reviewed, it seems as if the nature of a nurse's work possess various stressors, which can lead to severe consequences such as ill health, absenteeism, staff turnover and eventually suicide, depression and death.

Part two of the research aims was to conceptualise *nurses* and their *work environment* from a theoretical perspective.

Chapter 4 discusses the research methodology in terms of the population and sample to be used, the measuring instrument, the data collection and analysis methods and the formulation of statistical hypotheses.

RESEARCH METHODOLOGY

4.1 INTRODUCTION

This chapter explains the research methodology that was applied in the study, which includes a description of the population and the sample, as well as the measuring instruments that were used for data collection and analysis. The instruments will be discussed in terms of their rationale and purpose, dimensions, interpretation of the results, administration, scoring and reliability and validity. Research hypotheses were developed based on the relationship between occupational stress and locus of control. Descriptive and inferential statistics will be used to test the hypotheses.

The objective of this chapter is to explain the statistical methodologies that were applied in examining the relationship between occupational stress and locus of control. The research is primarily descriptive, in other words it is “the research for which the purpose is to produce an accurate representation of a person, event or situation” (Saunders, Lewis & Thornhill, 2007:596). This approach therefore involves either identifying a characteristic of an observed phenomenon or exploring possible correlations between the two phenomena (Leedy & Ormrod, 2005:179). In this study, the intention is to correlate two phenomena to determine a possible relationship between them. In descriptive research design, survey research is used. The objective of survey research is to gain knowledge of a large population by surveying a sample of that population.

According to Leedy and Ormrod (2005), a *survey* is a simple design, because the researcher poses a series of questions to willing participants, summarises their responses with percentages or frequency counts, and then draws conclusions from that particular population. In this research study, a sample of nurses from public and private hospitals and nursing students at the University of Pretoria was asked to participate in the study to draw conclusions from the possible relationship between occupational stress and locus of control.

One disadvantage of survey design is the fact that the researcher relies on self-report data. Thus, the participants are reflecting on what *they* believe to be true or perhaps what *they* think the researcher wants to hear. Moreover, people’s descriptions of their attitudes and

opinions are often created on the spot; in other words, they might not have thought about certain issues until the researcher questions them (Leedy & Ormrod, 2005).

A survey typically includes a face-to-face interview, a telephonic interview and a written questionnaire (Fink, 2009). In this study written questionnaires were distributed in order to obtain the data.

The research hypotheses were formulated in order to determine the relationship between occupational stress and locus of control. Descriptive and inferential statistics were used to test the hypotheses.

4.2 DESCRIPTION OF THE SAMPLE

In the current study, simple random sampling was used to select the participants. This method is derived from probability sampling, which will be justified from the literature. Thereafter, the reason for using this sampling method will be substantiated.

Before commencing with the definitions of probability and simple random sampling, definitions of what constitutes sampling are focused upon. For the purpose of this study, *population* is defined as the full set of cases from which a sample is taken (Saunders, *et al.*, 2007); it is therefore the complete collection of individuals, items or data under consideration in a statistical study (Stephans, 2006). The segment of the population selected for analysis is known as a sample. A *sample* is therefore a subgroup or part of a larger population (Saunders *et al.*, 2007).

Sampling is generally guided by three principles, namely (1) the greater the sample size, the more accurate the estimate of the true population, given that everything else remains the same, (2) the inferences drawn from the sample can be effected by both the size of the sample, and (3) the extent of variation in the sampling population (Kumar, 2005). Ferreira (2010) furthermore states that sampling has the following advantages, namely (1) information collection on a sample is less time-consuming and less costly, because the cost of research is dependent upon the number of hours which is spent on information gathering; and (2) sampling is a practical method of information gathering when the population is too large or infinite.

Samples are furthermore classified in to different designs, namely random/probability sampling, non-random/non-probability sampling and “mixed” sampling design. In this research study, probability sampling was used; because non-probability sampling methods cannot guarantee that the sample which is observed is representative of the whole population (Babbie, 2010). *Probability sampling* is thus the general term used for samples selected in accordance with the probability theory; which typically involves some random selection mechanism (Babbie, 2010). Probability sampling therefore provides a method for selecting representative samples from a large, known population; thus each member of the population has a known chance of being selected only once (Babbie, 2008). The method furthermore defies the problems of conscious and unconscious sampling bias by giving each element in the population a known probability of selection.

The advantage of probability sampling is that it enables the researcher to indicate the probability with which the sample results deviate in differing degrees from the corresponding population (Wellman, Kruger & Mitchell, 2007). Reis and Judd (2000) further state that the selected sample is representative of the larger population from which the sample is drawn and it permits the researcher to accurately estimate the amount of discrepancy that is present in a given data set, which is due to the sampling error. Researchers can thus calculate the degree to which random differences between the sample and the sampling frame are likely to have a diminished precision on the obtained estimates. Probability sampling tends to be more objective and allows the use of statistical techniques (Wrenn, Stevens & Loudon, 2006).

There are various types of probability sampling, namely simple random sampling, stratified sampling, systematic sampling, cluster sampling and multi-phase sampling.

In this research study, simple random sampling was used. According to Babbie (2010), *simple random sampling* is the basic sampling method assumed in the statistical computations of research. Ott and Longnecker (2010) state that simple random sampling consists of selecting a group of units in such a way that each sample size has the same chance of being selected (Riddiough & McColl, 2000).

The participants were chosen as a random sample of nurses, either studying at the University of Pretoria and/or working in private and public hospitals in Pretoria, Gauteng. A sample size of 302 nurses was randomly selected from the nursing population. The

participants were all involved in the field of nursing and everything linked to this field in the healthcare institution. The population therefore shared similar characteristics.

Sampling was completed in two stages:

1. *Students*

Firstly, the total population of registered nursing students was identified. In the second stage, a random sample of students, who attended the first quarterly class, was drawn from the population.

2. *Nurses*

After a discussion with the nursing managers and/or matrons, the total population of registered nurses was identified. In the second stage, a random sample of nurses was identified who were available during (1) a night shift and (2) a day shift. Thus, a particular shift was identified and the nurses were asked to complete the questionnaire.

With the help of the lecturers, nursing managers and matrons, time slots were allocated to explain the purpose of the study and the method of completing the questionnaire. The researcher was present during the sessions and provided assistance where needed. This method of sampling and the procedure followed allowed for an excellent response rate, which increased the success and effectiveness of the study.

4.3 MEASURING INSTRUMENTS

Two questionnaires were used in the research, namely the Work and Life Circumstances Questionnaire (WLQ) and Rotter's 23-item scale.

The two instruments were chosen to be relevant to the applicable study. The Work and Life Circumstances questionnaire was chosen to measure the nurses' level and causes of stress and Rotter's 23-item scale was used to identify the respondents' "type" of locus of control.

The Work and Life Circumstances (WLQ) and Rotter's 23-item scale will be discussed in the next sections.



4.3.1 Work and Life Circumstances Questionnaire (WLQ)

The discussion of the Work and Life Circumstances Questionnaire (WLQ) explores the rationale, purpose, administration, interpretation and validity and reliability of the questionnaire.

4.3.1.1 *Rationale and purpose*

The Work and Life Circumstances Questionnaire was developed in 1991 with the view of meeting the need for a questionnaire on stress that was standardised for South African circumstances. The questionnaire attempts to measure not only the level, but also the cause of stress.

The questionnaire was mainly developed to determine the level and causes of stress of an employee, whose reading and writing skills are at least on a standard eight/grade 10 level. Information about the person's level and causes of stress can be applied for diagnostic purposes, firstly, to determine whether the respondent experiences normal, high or very high levels of stress; and secondly, to establish the factors that cause the level of stress which being experienced.

The questionnaire is based on the rationale that a person with a high score experiences a high level of stress, which could mean that the respondent may experiences problems arising from the environment. The Work and Life Circumstances Questionnaire could also be used for selection purposes; however, since the experience and cause of stress fluctuate and do not remain constant over time, other collaborative information should be taken into account.

4.3.1.2 *Description of the questionnaire*

The WLQ consists of two sections namely, experience of work and circumstances and expectations.

- *Experience of work*

This part of the questionnaire is used to determine a person's level of stress. An indication is thus obtained of whether the person experiences a normal, high or very high level of stress.

The evaluation is based on the answers of 40 questions. A five-point scale is used to indicate how often certain feelings of stress occur. A high score indicates that the person experiences a high level of stress.

- *Circumstances and expectations*

This part of the questionnaire is used to analyse the circumstances and experiences which cause stress. The scores are obtained through evaluating the respondents' answers according to a five-point scale. In total, 76 questions are asked about the person's circumstances and about unfulfilled expectations.

- a. *Circumstances*

The circumstances that possibly cause stress may occur in and/or outside the work situation.

In the work situation

The circumstances in the work situation (seven items) which are analysed involve the following:

- The functioning of the organisation, the characteristics of the task(s) to be performed, the physical working conditions and job equipment, social as well as career matters, remuneration, fringe benefits and personnel policy.

A high score on the items indicates that the person experiences the above factors as problematic issues.

Outside the work situation

The following issues (covered by 16 items) are dealt with in this part of the questionnaire:

- Family problems, financial circumstances, phase of life, the general economic situation in the country, changing technology, facilities at home, social situations, status, health, background, effect of work on home life, transport facilities, religious life, political views and the availability of accommodation and recreational facilities.

In this part of the questionnaire, only a total score is calculated. A high score indicates that the person experiences issues outside the work situation as problematical.

b. Expectations

This part of the questionnaire contains a number of subdivisions and focuses by means of 53 items on the extent to which expectations in the work situation are fulfilled. The subdivisions include needs with regard to the functioning of the organisation, characteristics of the task(s) to be performed, physical working conditions and job equipment, social as well as career matters and remuneration, fringe benefits and personnel policy. Unlike the questions contained in the preceding parts, the questions under this heading are formulated in such a way that low scores in the subdivisions imply that the respondent has a problem with the issues raised.

Organisational functioning

This subdivision deals with the respondent's expectations with regard to the following matters:

- A share in decision-making, trust in supervisor(s), effective organisational structure, a positive management climate, recognition of work done well and open communication channels with the supervisor.

Characteristics of task(s) to be performed

The following expectations are dealt with in this section of the questionnaire:

- Getting the work done in time, having sufficient knowledge and information available to do the job, taking full responsibility for a piece of work, applying new ideas, functioning autonomously within one's post, not receiving contradictory instructions, not having to function under unnecessary pressure of time, having enough work to do to stay busy, and performing a variety of tasks as part of one's work. Other matters dealt with in this subdivision concern the execution of tasks that will not by their nature create conflict or strain the respondent's relations with other people, subject him/her, have a negative effect on the respondent's quality of life and demand continued intense concentration.



Physical working conditions and job equipment

The expectations measured in this part of the questionnaire are the following:

- The availability of equipment, as well as its being in proper working order, and being allowed to function in adequate physical working conditions.

Career opportunities

This part contains questions on the following matters:

- The respondent's expectations regarding further training, the use of his/her talents, and progress in his/her work and the security of his/her present job.

Social matters

The expectations measured in this part include the following:

- Enjoying high status in one's job, maintaining positive relations with the manager or supervisor as well as with colleagues, and that the social demands are reasonable.

Remuneration, fringe benefits and personnel policy

This part contains questions dealing with the following expectations:

- To receive adequate remuneration and fringe benefits, and to function under a just personnel policy.

4.3.1.3 Interpretation

A five-point Likert-type scale is used to rate the responses in the questionnaire. The rating is defined as follows:

- | | |
|---|--------------------|
| 1 | = virtually never |
| 2 | = sometimes |
| 3 | = reasonably often |

- 4 = very often
5 = virtually always

The questionnaire has two different sections: (1) Section 2.1 (experience of work) contains questions based on feelings that the participants experience in their work. This section has 40 questions, (2) Section 2.2 (circumstances and expectations) is based on the way the participant feels about important circumstances in and outside his/her work; and about the extent to which the respondent feels that his/her expectations with regard to his/her job are realised. This section has 23 and 53 questions respectively.

4.3.1.4 Administration and scoring

i. Administration

The Work and Life Circumstances Questionnaire is a self-administered questionnaire. Clear instructions were given on the day of testing. The items were structured with a rating scale for each item, therefore the respondents could rate the items based on their feelings and observations.

Respondents who left out two or fewer answers per scale and/or marked two or more double responses per scale, were given a score of three for every such item. If there were more than two of these answers per scale the answer sheet was not scored, since the results could reflect a distorted picture of such respondent's level of stress and the causes thereof.

ii. Scoring

Scoring stencils are provided to calculate the scores for the different subdivisions, if this part is scored by hand. The scores include those for organisational functioning, task characteristics, physical working conditions, job equipment, social as well as career matters and remuneration, fringe benefits and personnel policy.

a. The level of stress

The score for this part of the questionnaire is obtained by determining the aggregate of the answers (Items 1 – 40 under Scale A).

b. *The cause of stress*

The causes of stress are divided into two groups, namely (1) causes arising outside, and (2) causes originating in the work situation.

4.3.1.5 *Reliability and validity*

The *reliability* of the questionnaire is “the extent to which data collection techniques will yield consistent findings; similar observations would be made or conclusions reached by other researchers or there is transparency in how sense was made from the raw data” (Saunders *et al.*, 2007:609). Reliability can be determined by means of the test-retest and internal consistency method. Test-retest estimates are obtained by “correlating data collected with those from the same questionnaire collected under as near equivalent conditions as possible” (Saunders *et al.*, 2007:367). The questionnaire therefore has to be administered twice to respondents.

Table 4.1 displays the reliability of the different fields of the Work and Life Circumstances Questionnaire calculated according to the Richardson formula 8 as modified by Ferguson and a test-retest in which the two test administrations were carried out four weeks apart.

Table 4.1: Kuder-Richardson formula 8 and test-retest reliability coefficients

Scale	KR 8	Test-retest
Level of stress	.92	.79
Causes arising outside the work situation	.85	.80
Causes originating within the work situation:		
Organisational functioning	.83	.72
Task characteristics	.83	.65
Physical working conditions and job equipment	.84	.62
Career matters	.84	.72
Social matters	.64	.69
Remuneration, fringe benefits and personnel psychology	.86	.65
N	731	178

Source: Van Zyl & Van der Walt (1991:21)

Table 4.1 indicates that the reliability coefficients of the Kuder-Richardson formula 8, in terms of the I range from 0.83 to 0.92; and the test-retest reliability coefficients vary from 0.62 to 0.80 (Van Zyl & Van der Walt, 1991:21).

Based on the results, the reliability of the Work and Life Circumstances Questionnaire is regarded as satisfactory. It also compares favourably with the reliability coefficient of the 16

Personality Factors (16PF) Questionnaire reported by Cattell, Eber and Tasouka. These coefficients ranged from 0.35 to 0.92.

The questionnaire furthermore has both content and construct validity. *Content validity* is measured in terms of face validity and logical validity. *Face validity* refers to the items the questionnaire measures (Saunders *et al.*, 2007); and *logical validity* requires a careful definition in behavioural terms of the trait or the aspects of behaviour dealt with in the questionnaire and it requires the analysis of that behaviour aspect in the parts it represents.

Construct validity is concerned with the extent to which the questionnaire measures a theoretical construct or trait. Information in this regard can be obtained through an intratest method (aimed at a study of the internal structure of the questionnaire) and an intertest method (the simultaneous evaluation of correlations between a large number of questionnaires).

The relationship between the Work and Life Circumstances Questionnaire and the 16 Personality Factors (16PF) Questionnaire, as well as the Personal Home Social and Formal (PHSF) Relations Questionnaire was examined as part of the intertest method. Research indicated that the 16PF Questionnaire can be used to measure stress and the PHSF is a measuring instrument that attempts to measure personal and social adjustment among adults. In order to obtain further proof of construct validity, the Work and Life Circumstances Questionnaire was also related to cognitive and behavioural symptoms of stress. In order to gain information on these matters, the questionnaire on the Reaction to Demands in Life was developed for administration with the Work and Life Circumstances Questionnaire.

In summary, from the above information, it is evident that the Work and Life Circumstances Questionnaire is both valid and reliable.

4.3.2 Rotter's 23-item scale

The discussion of Rotter's 23-item scale explores the rationale, purpose, description of the questionnaire, reliability, validity and critique of questionnaire.



4.3.2.1 *Rationale and purpose*

The questionnaire was originally developed by Julian B. Rotter in 1966; and generally measures the generalised expectancies for internal versus external control of reinforcement. As mentioned in the literature review, an individual with an internal locus of control believes that his/her rewards are determined by his/her own actions or behaviours. An external, on the other hand, believes that the rewards he/she receives are beyond his/her control and his/her behaviour does not matter. The scoring continuum ranges from internal to external where a low score indicates an internal locus of control and a high score an external locus of control.

4.3.2.2 *Description of the questionnaire*

The original locus of control questionnaire had a set of 26 items, with a Likert-type response scale and it was developed on priori grounds. That is, the items were written to replicate the theoretical literature. The present questionnaire is a 29-item forced choice scale, which includes six filler items that are used to mask the intent of the questionnaire. According to Forte (2005), Rotter's 23-item scale is the instrument which is most often used to determine the degree of internality versus externality.

The scale presents the respondent with a set of items from which the respondent has to select the one that he/she believes in the most, for example: (a) becoming a success is a matter of hard work; or (b) getting a good job depends on being at the right place at the right time. For each pair, one statement represents an internal locus of control and the matching statement an external locus of control. Each respondent's score for the scale has a potential range from 0 to 23, where a score of 23 indicates an extreme external locus of control and 0 being extremely internal.

4.3.2.3 *Reliability and validity*

According to Domino and Domino (2006), locus of control is one of the most studied variables in psychology and numerous locus of control scales are available. This phenomenon, however, does not influence the reliability and validity of the questionnaire.

Domino and Domino (2006) state that Rotter reported split-half reliabilities of 0.65 for males and 0.79 for females; Kuder-Richardson coefficients for various samples were between 0.69

and 0.76. The nature of the scale – brief, forced-driven and composed of items covering a variety of situations – could result in an underestimate of its internal consistency. However, the test-retest reliability ranges from 0.49 and 0.83. Correlations, with a measure of social desirability, furthermore ranged from -0.17 to -0.35, with a mean of -0.22 and correlations with various measures of intelligence were insignificant. Rotter also reported a two-factor analysis, both of which suggested one general factor (Domino & Domino, 2006). A number of other studies were presented, which dealt with the construct *validity* of the measure; these included correlations with story-completion and semi-structured interview measures of locus of control, analysis of social class differences and controlled laboratory tasks.

Domino and Domino (2006) further state that literature is absolute with studies which support construct validity of the questionnaire and the concept. Locus of control scores are associated with a wide variety of behaviours such as academic achievement and various aspects of problem-solving.

Table 4.2: Summary of the locus of control scale

Measure and author	Category of control measured	Description	Reliability	Validity
Internal-external locus of control scale, developed by Julian B. Rotter	Internal-external locus of control	29-item forced choice format	0.72 to 0.78	Construct validity

Source: Rice (2000:464)

4.3.2.4 Criticism

Crandnell, Kotkovsky and Crandall (in Lefcourt, 1982) raised three issues that were applicable to the questionnaire, namely:

1. Generalisation. The scales were developed to measure control expectancies in different reinforcement areas, for example, achievements and accomplishments, and affiliation, but factor analysis only revealed one general factor. With repeated item analyses, the scale was eventually reduced to 23 items, which were viewed as being homogeneous. Despite this homogeneity, Crandall and his colleagues did not feel that there has been a substantial demonstration that beliefs across reinforcement areas were consistent.

2. The second problem raised relates to the sources of external control. That is, in more general scale, a variety of external coercers is mentioned as potential forces arrayed against self-direction. Luck, fate, impersonal and personal forces are described as agents of external control. Crandell *et al.* (1982) therefore chose significant others, parents, teachers and peers as the courses of external control. Crandell *et al.* (1982) felt that these external forces have an interest in the natural development of autonomy within the child's world.
3. The third point raised is concerned with the type of reinforcement, namely positive versus negative reinforcement. The investigators argued that the responsibility for success can be independent of the way in which individuals interpret their failures. Crandell *et al.* (1982) therefore developed separate scores for the response to success and failure.

In summary, the concept *locus of control* has generated much research in a variety of psychological fields; but a careful distinction should still be made between locus of control and the dependent construct to be measured. One has to furthermore take into account that locus of control, as a psychology topic, is likely to be a continued topic of investigation for many years.

4.4 DATA COLLECTION

Various methods could be used to gather data, for example, questionnaires, interviews, direct observations and reporting. In this study, questionnaires were used to obtain quantitative data, in order to statistically determine the relationship between occupational stress and locus of control.

The data collection procedure followed in this study is provided below:

- the researcher discussed the purpose of the study and questionnaire with the participants and asked them to sign the consent form;
- instructions, on how to complete the questionnaire, were given to the participants;
- the questionnaire included biographical information, which contained questions on the participants' gender, race, marital status, job level, years of experience and qualification;
- the work and life circumstances questionnaire and Rotter's 23-item scale were distributed to all the participants; and
- the participants completed the questionnaire during the session allocated to the researcher and the researcher collected the documents as they have been completed.

Wood and Kerr (2011) state that when the researcher's objective is to find out what people believe or think, the easiest and most effective method is to ask questions directly to the person, therefore an interview could be conducted or a questionnaire could be distributed. Nurses are generally more accustomed to the interview process, because they ask questions frequently as part of their job (Wood & Kerr, 2011); but they quickly see the value of questionnaires and adapt easily to the idea of self-report. Questionnaires were therefore distributed to the participants due to the following reasons:

- distributing questionnaires are less expensive;
- subjects feel a greater sense of anonymity;
- the format is standard for all the participants and is not dependent on the mood of the interviewer. Therefore the researcher cannot introduce bias into the results;
- the questionnaire can cover a large sample or geographical area; and
- the greater amount of data over a broad range of topics may be collected.

This data collection method is definitely an advantage to the research study as it ensures a high response rate to the researcher.

4.5 DATA ANALYSIS

Once the data has been collected it should be analysed. In this research study quantitative data analysis was used.

Quantitative data in a raw form (before it has been processed and analysed) conveys little meaning to most people (Saunders *et al.*, 2007); therefore the data needs to be processed in order to make it useful. Quantitative analysis techniques range from creating simple tables or diagrams, which demonstrate the frequency of occurrences, and using statistics such as indices to enable comparisons through statistical relationships between variables to complete statistical modelling. Leedy and Ormrod (2005) state that one should examine the data and explore various ways of organising it, before using statistical procedures. In this study, a data set was used to capture and organise the data.

The data set was in the form of a Microsoft Excel spreadsheet. The advantage of capturing data in an electronic spreadsheet is that once the data has been entered, the software can quickly and easily make the desired calculations (Leedy & Ormrod, 2005). Once the data was entered and saved in the spreadsheet, analysis commenced.

Explanatory data analysis was used in the initial stages of analysis. Consequently, the researcher used diagrams to explore and understand the data. One should keep the research question and objectives in mind when exploring the data. In summary, the aim of this stage is to analyse and describe the characteristics of the data obtained in the study.

According to Saunders *et al.* (2007), one should start the analysis by observing individual variables and components, which include (1) specific values, (2) the highest and lowest values, (3) trends over time, (4) proportions, and (5) distributions. Once these characteristics have been explored, one should begin to compare and determine relationships between the variables.

Testing the hypothesis is the final hurdle in the data analysis process. Statistical hypothesis involves comparing the distribution of data collected by the researcher with an ideal or hypothetical distribution (Leedy & Ormrod, 2005). This stage will use inferential statistics, which will evaluate the research questions and hypothesis. Inferential statistics furthermore allow one to make inferences about a large population from a relatively small sample (Leedy & Ormrod, 2005).

In this study, data was analysed by applying descriptive and inferential statistics. These elements will be discussed accordingly.

4.5.1 Descriptive statistics

Descriptive statistics describe the general nature of the data obtained (Leedy & Ormrod, 2005). Thus statistical computations are used to describe either the characteristics of a sample of the relationship among variables (Babbie, 2010). It furthermore summarises a set of sample observations.

The results of descriptive statistics are usually in tabular or graphical form. The descriptive statistics that were used in the study include frequencies, means and standard deviation. Each of these elements will be discussed in turn.

4.5.1.1 Frequency distribution

Frequency distributions are often organised tabulations of the number of individuals located in each category on the scale of measurement (Gravetter & Wallnau, 2009). A frequency

distribution thus takes a disorganised set of scores and places them in order of highest to lowest, grouping together all individuals who have the same score. In summary, a frequency distribution allows the researcher to see the entire set of scores; and it indicates whether the scores are generally high or low or whether they are centralised in one area across the scale. Frequency distributions are generally structured as tables or graphs, and are presented in terms of two elements, namely (1) the categories of the original measurement scale, and (2) the frequencies of each category (Gravetter & Wallnau, 2009).

In this study, the respondents' perception of their perceived stress levels and causes of stress were summarised in a frequency distribution based on the following scale: (1) virtually never, (2) sometimes, (3) reasonably often, (4) very often, and (5) virtually always. With the use of this scale and frequency distribution one could detect whether the scores are high or low; which, in turn, indicates the perceived level of stress.

4.5.1.2 *Mean and standard deviation*

Saunders *et al.* (2007) state that the most frequently used measure of central tendency is the mean or average. In statistical terms the *mean* is defined as the arithmetical average of a set of scores (Wellman *et al.*, 2007). The mean is thus computed by adding a list of scores and dividing them by the total number of scores.

The value of the mean is influenced by extreme data values in skewed distributions (Saunders *et al.*, 2007). In such cases, the mean tends to be drawn towards the long tail of extreme data values and may be less representative of the central tendency. Therefore, the median may in some cases be more useful in descriptive statistics; but still the mean is used as a building block in many statistical cases to measure the relationship between variables.

The standard deviation is the most commonly used and most important measure of variability in statistics. According to Gravetter and Wallnaue (2009) the standard deviation uses the mean as reference point and measures variability by calculating the distance between each score and the mean. When the data points are close to the mean, the standard deviation will be low, whereas a high standard deviation indicates that the data is distributed over a large number of values.

The means and standard deviations for all the dimensions of occupational stress and locus of control were included in the empirical study.

4.5.1.3 Analysis of variance (ANOVA)

Analysis of variance (ANOVA) is “a statistical test used to determine the probability (likelihood) that the values of a quantifiable data variable for three or more independent samples or groups are different” (Suanders *et al.*, 2007). The test therefore assesses whether there is a difference between these groups occurring by chance alone. In summary, ANOVA is thus the spread of data values, in and between groups of data by comparing means. The *f* ratio or *f* statistic represents these differences. According to Saunders *et al.* (2007), if the likelihood of any difference between the groups occurring by chance alone is low, then this will be represented by a large *f* ration with a probability of less than 0.05.

The major independent variables in this study, for the purpose of ANOVA, were: (1) the level of stress, (2) the causes of stress, (3) causes arising outside the work situation, and (4) causes originating within the work situation. The dependent variables for each ANOVA were (1) internal locus of control and (2) external locus of control.

Within this study the purpose of ANOVA was to test for significant differences between means; as well as to see whether there was a difference between groups on some variables.

4.5.1.4 Level of significance

The *level of significance* is defined as “the probability of obtaining a value of the least statistic that is as likely or more likely to reject H_0 as the actual observed value of the test statistic, assuming that the null hypothesis is true” (Ott & Longnecker, 2010:246). Therefore, if the level of significance is small, then the sample data will fail to support the H_0 , which will result in the rejection of the H_0 . On the other hand, if the level of significance is large, then the H_0 is rejected.

According to Leedy and Ormrod (2005:270), “one common cut-off is a 1-in-20 probability: that any result would occur by chance only 5% of the time probability is not due to chance but instead to another systematic factor that is influencing the data”. Other researchers use a more precise 1-in-100 norm; thus the observed result would occur by chance only one time in 100 (Leedy & Ormrod, 2005). The significant levels which are most often used are 0.05 and 0.01; therefore for this study, a 0.05 significance level was chosen.

The level of significance was therefore used to determine the statistical significance of the study.

4.5.2 Correlations

Correlations are used to describe a relationship between variables (Wellman *et al.*, 2007) and to estimate whether a change in one variable correlates with the changes in another variable. Babbie (2010:95) defines a *correlation* as “an empirical relationship between two variables that changes in one are associated with changes in the other or particular attributes of one variable are associated with particular attributes of another”. The coefficient can take on a value between -1 and +1 (Saunders *et al.*, 2007). A +1 value signifies a perfect positive correlation, which indicates that the two variables are precisely related. Thus, as the one variable increases, the values of the other variable will also increase (Saunders *et al.*, 2007). A value of -1 represents a perfect negative correlation, which indicates that the two variables are precisely related; however, as the value of the one variable increases, the other will decrease.

In this study, the Pearson product moment correlation coefficient (PMCC) was used to assess the strength of the relationship. The reason for using the PMCC is because both variables contain quantifiable data. The PMCC is furthermore the most familiar measure of dependence between two quantities, and is obtained by dividing the covariance of the two variables by the product of their standard deviations. If the Pearson correlation is +1, then there was a perfect positive linear relationship; and a -1 indicates a perfect decreasing linear relationship. The closer the coefficient is to either -1 or +1, the stronger the correlation between the variables.

4.6 FORMULATION OF HYPOTHESES

The final step in the research study is to accept or reject the hypothesis. Leedy and Ormrod (2005:4), define a *hypothesis* as “a logical supposition, a reasonable guess, and educated conjecture”. It is thus the proposition to be tested in order to determine whether there is a relationship between two or more events or concepts (Saunders *et al.*, 2007:599).

In this research study, the hypothesis was used to determine the relationship between occupational stress and locus of control. The following hypotheses was thus formulated:

Hypothesis 1:

- H₁: A nurse with an internal locus of control will experience higher stress levels than a nurse with an external locus of control.
- H₀: A nurse with an internal locus of control will not experience higher stress levels than a nurse with an external locus of control.

Hypothesis 2:

- H₂: A nurse with an external locus of control will experience higher stress levels than a nurse with an internal locus of control.
- H₀: A nurse with an external locus of control will not experience higher stress levels than a nurse with an internal locus of control.

Hypothesis 3:

- H₃: Locus of control will determine the stress level experienced by a nurse.
- H₀: Locus of control will not determine the stress level experienced by a nurse.

4.7 CHAPTER SUMMARY

This chapter dealt with the research methodology that was applied in the research study, in terms of the sample and population, the measuring instruments, data collection and analysis methods that were used. The chapter was concluded by the formulation of the hypothesis to be tested.

In Chapter 5, the results of the study are reported and interpreted.

RESULTS

5.1 INTRODUCTION

The key purpose of this chapter is to present and discuss the statistical results of the study and to integrate the findings with the literature review. Descriptive, correlational and inferential statistics will be applied in order to report the data.

5.2 DESCRIPTIVE STATISTICS

Descriptive statistics describe the main features of a collection of data quantitatively (Mann, 2010). It therefore aims to summarise the data quantitatively without employing probabilistic formulations (Dodge, 2003). Descriptive statistics rather make inferences about the population that the data represents. The following statistical elements will be applied to exemplify the data: (1) frequency distributions, (2) means, (3) standard deviations, and (4) Cronbach alpha coefficient.

5.2.1 Cronbach alpha reliability coefficients

According to Vogel (2006:113), “the Cronbach alpha reliability coefficients and its subscales ranged from 0.74 to 0.95 that was indicative that the WLQ and its subscales had a good to very good reliability”. Based on research study conducted by Oosthuizen and Koortzen (2009), the Cronbach alpha coefficients ranged from 0.72 to 0.92. These are displayed in Table 5.1.

Table 5.1: Cronbach alpha reliability coefficients of the experience of Work and Life Circumstances Questionnaire

Subscales	Cronbach alpha coefficient
Stress level	.92
Causes arising outside the working situation	.82
Organisational functioning	.79
Task characteristics	.72
Physical working conditions and job equipment	.82
Career matters	.77
Social matters	.77



Remuneration, fringe benefits and personnel policy	.83
--	-----

Source: Oosthuizen & Koortzen (2009:5)

The coefficients were acceptable for most of the subscales, except for the task characteristic subscales, which were somewhat lower than acceptable.

5.2.2 Frequency distribution tables of the demographics

Tables 5.2 to 5.10 indicate the profile of the biographical sample by gender, age, marital status, language, highest qualification, occupational level, years of experience and the shifts they work.

Table 5.2: Frequency distribution: respondents

Type	Frequency	Percentage
Nursing students (NS)	208	68.87
Nurses (N)	86	28.48
Students (S)	8	2.65

According to Table 5.2, the sample consisted of 68.87% nursing students (NS), 28.48% nurses (N) and 2.65% students (S).

Table 5.3: Frequency distribution:gender profile of the sample

Gender	Frequency	Percentage
Male	16	5.35
Female	283	94.65

According to Table 5.3, the sample consisted of 5.35% male representatives and 94.65% female.

Table 5.4: Frequency distribution:age profile of the sample

Age	Frequency	Percentage
<21	4	1.34
21-29	32	10.7
30-39	98	32.78
40-49	125	41.81
50-59	39	13.04
60+	1	0.33

According to Table 5.4, 1.34% were younger than 21; 10.7% were between 21 and 29 years of age; 32.78% were between 30 and 39 years old; 41.81% were between 40 and 49; 13.04% were between 50 and 59 years of age and 0.33% were 60 years or older.

Table 5.5: Frequency distribution:marital status of the sample

Marital status	Frequency	Percentage
Unmarried	73	24.66
Married	172	58.11
Divorced	21	7.09
Unmarried, single parent	26	8.78
Separated	4	1.35

According to Table 5.5, the sample consisted of 24.66% unmarried respondents; 58.11% married respondents; 7.09% divorced respondents; 8.78% unmarried, single parents; and 1.35% of the respondents were separated.

Table 5.6: Frequency distribution:language profile of the sample

Home language	Frequency	Percentage
Afrikaans	70	23.49
English	17	5.7
Ndebele	14	4.7
Northern Sotho	69	23.15
Shangaan	9	3.02
Southern Sotho	5	1.68
Swazi	14	4.7
Tsonga	17	5.7
Tswana	43	14.43
Venda	5	1.68
Xhosa	10	3.36
Zulu	24	8.05
Other	1	0.34

According to Table 5.6, 23.49% of the sample's home language was Afrikaans, 5.7% English, 4.7% Ndebele, 23.15% Northern Sotho, 3.02% Shangaan, 1.68% Southern Sotho, 4.7% Swazi, 5.7% Tsonga, 14.43% Tswana, 1.68% Venda, 3.36% Xhosa, 8.05% Zulu and 0.34% spoke another language.

Table 5.7: Frequency distribution: qualification profile of the sample

Qualification	Frequency	Percentage
Grade 12	31	10.37
Diploma	195	65.22
Degree	19	6.35
Postgraduate qualification	47	15.72
Other	6	2.01

According to Table 5.7, 10.37% of the sample's highest qualification was a Grade 12 certificate, 65.22% a diploma, 6.35% a degree, 15.72% a postgraduate qualification and 2.01% indicated that they have another qualification.

Table 5.8: Frequency distribution: occupational level profile of the sample

Occupational level	Frequency	Percentage
Student	21	7.29
Registered nurse	219	76.04
Licensed practical nurse	7	2.43
Nurse practitioner	19	6.6
Nurse midwife	19	6.6
Nurse anaesthetist	3	1.04

According to Table 5.8, 7.29% were students, 76.04% registered nurses, 2.43% licensed practical nurses, 6.6% nurse practitioners, 6.6% nurse midwives and 1.04% was nurse anaesthetists.

Table 5.9: Frequency distribution: years of experience profile of the sample

Years of experience	Frequency	Percentage
< 1 years	7	2.37
1 -5 Years	45	15.25
6 – 10 years	47	15.93
11 – 14 years	46	15.59
15 + years	150	50.85

According to Table 5.9, 2.37% of the sample had less than one year of experience; 15.25% had between 1 and 5 years' experience; 15.93% had between 6 and 10 years' experience; 15.59% had between 11 and 14 years' experience and 50.85% of the population had more than 15 years' experience.

Table 5.10: Frequency distribution: shift profile of the sample

Shifts	Frequency	Percent
Day	148	49.66
Night	31	10.4
Both	118	39.6

According to table 5.10, 49.66% of the sample worked the day shift; while 10.4% worked the night shift and 39.6% worked both the day and night shift.

- *Interpretation*

When assessing and interpreting the data, some key characteristics of the sample should be taken into account. These characteristics were summarised in tables 5.2 to 5.10. Firstly, in terms of the respondents, nursing students constituted most of the sample, 68.87%. This implies that the findings of the research may only be applicable to this group. Secondly, females were dominant among the sample (94.65%). Once again this may imply that the findings are applicable only to this group. Thirdly, the age groups appeared predominantly between the ages of 40 and 49, which fall in the mature career stage. Fourthly, the marital status indicates that the sample was represented by 58.11% married and 24.66% unmarried individuals. Fifthly, according to the responses based on language, one could assume that the largest population group was African. The results indicate that 70.81% spoke an African language. The field of expertise indicates that the majority of the sample (76.04%) was registered nurses, which implies that the research findings would only be applicable to this particular group of proficiency. Finally, the working time of the respondents indicates that the sample was represented by 49.66% who work the day shift, 10.40% the night shift and 39.60% indicated that they work both the day and night shift.

5.2.3 Mean and standard deviations

This section discusses the descriptive statistics on each questionnaire, namely the Work and Life Circumstances and Rotter's 23-item scale. The score for each subscale or dimension was calculated by obtaining the average of the various individual items.

5.2.3.1 *Work and Life Circumstances Questionnaire*

Table 5.11 is a tabular representation of the Work and Life Circumstances Questionnaire's mean and standard deviations.

Table 5.11: WLQ: Mean scores and standard deviation (N = 258)

Scale	Minimum	Maximum	Mean	Standard deviation
Level of stress	41	158	80.14	19.87
Causes arising outside the work situation	16	61	33.54	9.78
Causes originating within the work situation:	3	32	17.04	5.99
Organisational functioning	13	68	43.26	10.21
Task characteristics	2	34	17.58	6.97
Physical working conditions and job	7	39	22.35	6.60



equipment				
Career matters	5	34	21.62	6.45
Social matters	0	42	19.37	8.46
Remuneration, fringe benefits and personnel psychology	0	22	11.53	4.61

The Work and Life Circumstances Questionnaire (WLQ) asks participants to indicate (on a five-point Likert scale) how often certain feelings occur in their daily routine, at work and at home. The questionnaire is divided into two sections, namely experience of work and the participant's circumstances and expectations. Table 5.11 indicates the minimum and maximum scores, mean scores and standard deviations of each WLQ subscale.

5.2.3.2 *Locus of control*

Table 5.12 is a tabular representation of Rotter's 23-item scale's mean and standard deviation.

Table 5.12: Locus of control: mean scores and standard deviation (N = 258)

Scale	Minimum	Maximum	Mean	Standard Deviation
Rotter's 23-item scale	0	22	11.53	4.61

Rotter's 23-item scale asks participants to choose from a set of items from which he/she has to select the one that he/she believes in the most. For each pair, one statement represents an internal locus of control and the matching statement an external locus of control. The score for the scale has a potential range from 0 to 23; where a score between 0 and 11.50 indicates an external locus of control and 11.51 to 23 an internal locus of control. Table 5.12 specifies the mean (11.53) and standard deviation (4.61) of Rotter's 23-item scale. The average score indicates that the respondents seem to have an internal locus of control (≥ 11.51).

This result therefore indicates that the participants seem to believe that they were in control of their own behavioural outcomes and had control in most situations; rather than believing that their situation was controlled by luck, fate or external forces.

5.3 RELATIONSHIP BETWEEN THE STRESS LEVEL AND CAUSES OF STRESS

Table 5.13 is a tabular representation of the relationship between the level of stress and the causes thereof.

Table 5.13: Relationship between the level of stress and the causes thereof

Causes of stress	Level of stress	Frequency	Percent
Level of stress	Normal	136	52.7%
	High	73	28.2%
	Very high	49	18.99%
Causes outside of work	Normal	133	51.5%
	High	68	26.3%
	Very high	57	22.0%
Causes within the organisation			
Organisational functioning	Normal	133	51.5%
	High	78	30.2
	Very high	47	18.2
Task characteristics	Normal	162	62.7
	High	45	17.7
	Very high	51	19.7
Physical working conditions	Normal	114	44.1
	High	64	24.8
	Very high	80	31.0
Career matters	Normal	131	50.7
	High	73	28.9
	Very high	54	20.9
Social matters	Normal	148	57.3
	High	55	21.3
	Very high	55	21.3
Remuneration	Normal	79	30.6
	High	63	24.4
	Very high	116	44.9

In terms of Table 5.13, the respondents' mean level of stress seems to be normal (52.7%). Causes outside the work environment seem to contribute to normal levels of stress (51.5%); but causes in the organisation such as organisational functioning (30.2%), physical working conditions (31.0%) and remuneration (44.9%) seem to cause high to very high levels of stress.

5.4 RELATIONSHIP BETWEEN OCCUPATIONAL STRESS AND LOCUS OF CONTROL

The Pearson product moment correlation coefficient was used to determine whether there is a relationship between occupational stress and locus of control. The PPMC was used to determine the strength of the relationship between the variables. These results are summarised in Table 5.14.



Table 5.14: Pearson product moment coefficient: occupational stress and locus of control

Element		Locus of control
Level of stress	r	-0.19956
	sig	0.0013*
Causes outside of work	r	-0.08499
	sig	0.1735
Causes inside the organisation		
Organisational functioning	r	0.02217
	sig	0.7230
Task characteristics	r	0.00297
	sig	0.9622
Physical working conditions	r	0.06943
	sig	0.2665
Career matters	r	0.05659
	sig	0.3653
Social matters	r	0.02115
	sig	0.7352
Remuneration	r	-0.00888
	sig	0.8871

$P \leq 0.05$

As shown in Table 5.15, there is a “weak” negative relationship between the level of stress and locus of control ($r = -0.19956$). This indicates that the two variables are related; however, as the value of the one variable increases that of the other decreases. Thus, in this research study, the participant’s locus of control (LOC) will have an effect on his/her stress level. This phenomenon is illustrated in Figure 5.10.

Figure 5.1: Correlation: Level of stress and locus of control

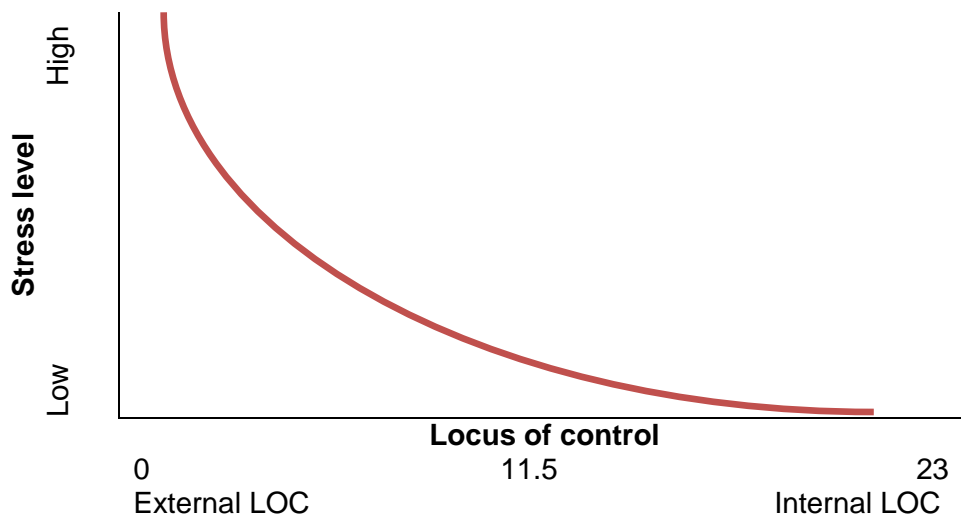


Figure 5.1 illustrates the negative correlation between the participant's locus of control and stress level. The stress level of a participant with an external locus of control will be high; whereas the stress level of an internal will be low. Thus, the participant's location on the locus of control continuum will influence his/her stress level.

To further investigate the relationship between occupational stress and locus of control, the respondents were classified for each element of stress as normal, high or very high, according to the Work and Life Circumstances Questionnaire. For each group, the mean value of locus of control is reported in Table 5.15.

Table 5.15: Relationship between occupational stress and locus of control

Element	Level of stress	N	Mean of locus of control (out of 23)	Standard Deviation
Level of stress	Normal	136	12.50	4.01
	High	73	10.68	5.50
	Very High	49	10.08	4.12
Causes outside of work	Normal	133	11.91	4.41
	High	68	11.16	5.17
	Very High	57	11.07	4.33
Causes inside the organisation				
Organisational functioning	Normal	133	11.63	4.80
	High	78	11.53	4.40
	Very High	47	11.21	4.44
Task characteristics	Normal	162	11.42	5.00
	High	45	11.06	3.89
	Very High	51	12.27	3.76
Physical working conditions	Normal	114	11.95	4.64
	High	64	11.25	4.67
	Very High	80	11.15	4.50
Career matters	Normal	131	11.58	5.09
	High	73	11.52	4.01
	Very High	54	11.42	4.16
Social matters	Normal	148	11.49	5.19
	High	55	11.69	4.04
	Very High	55	11.47	3.34
Remuneration	Normal	79	11.30	5.46
	High	63	11.76	3.83
	Very High	116	11.56	4.37

In terms of Rotter's 23-item scale, a score between 11.51 and 23 represents a high score, which indicates that the participant has an internal locus of control. If the participant obtained a score between 1 and 11.50; he/she tends to have an external locus of control. The results indicate that participants with an external locus of control (≤ 11.50) seem to experience high

to very high stress levels. The mean score obtained under the “level of stress” element, namely the mean score of “high level of stress” is 10.68 (external) and the score of “very high level of stress” is 10.08 (external).

From the results obtained in Table 5.15 the researcher noted that the participants with an internal locus of control indicated that they experience some level of stress with regard to task characteristics, social matters and remuneration. This phenomenon will be discussed in Chapter 6. As discussed in the literature review (Chapter 2), an individual with an external locus of control tends to experience higher stress levels than an individual with an internal locus of control. The results discussed in Table 5.16 therefore confirm the findings of the literature.

Table 5.16 is a summary of the findings of the relationship between the level of stress and locus of control.

Table 5.16: Relationship between the level of stress and locus of control

Level of stress	N	Mean (Out of 23)	Locus of control
Normal	136	12.50	Internal locus of control
High	73	10.68	External locus of control
Very high	49	10.08	External locus of control

From the results obtained and displayed in Table 5.16, participants with an internal locus of control seem to experience normal stress levels (12.50), whereas an individual with an external locus of control experience high (10.68) to very high (10.08) stress levels.

5.5 REGRESSION ANALYSIS

In order to further investigate the relationship between occupational stress and locus of control, a standard multiple regression analysis was conducted. These findings are summarised and discussed in the selection below.

5.5.1 Relationship between occupational stress and locus of control

The objective of this section is to determine which aspect of occupational stress can be used to predict locus of control.

Table 5.17: Occupational stress and locus of control

Variable	DF	Parameter estimates	Standard error	t-value	Pr > t
Intercept	1	14.64561	1.94786	7.52	<.0001*
Level of stress	1	-0.0518	0.01742	-2.97	0.0032*
Causes outside of work	1	0.02878	0.03613	0.80	0.4265
Causes inside the organisation					
Organisational functioning	1	-0.3488	0.08253	-0.42	0.6730
Task characteristics	1	-0.3838	-0.77	-0.77	0.4438
Physical working conditions	1	0.04444	0.86	0.86	0.3919
Career matters	1	0.10165	1.31	1.31	0.1920
Social matters	1	0.00896	0.12	0.12	0.9053
Remuneration	1	-0.04750	-1.03	-1.03	0.3044

P ≤ 0.05

The regression analysis indicates that the independent variable gave an R² of 0.0521. This indicates that the independent variables only explain 5.21% of the variation in the dependent variable (locus of control), with level of stress as a significant contributor.

These results confirm the illustration in Figure 4.1: an individual with an internal locus of control will experience low stress levels, but high stress levels when the individual has an external locus of control. Therefore, there is a negative correlation (t-value = -2.97) between locus of control and occupational stress.

5.6 COMPARISON OF OCCUPATIONAL STRESS AND DEMOGRAPHIC VARIABLES

This section determines whether certain demographics such as occupational level, marital status and working time have an influence on occupational stress. An analysis of variance (ANOVA) was used.

Table 5.18: ANOVA: comparison of occupational stress, occupational level, marital status and working time

Independent variable	Source	DF	F-value	Pr>F
Level of stress	Occupational level	1	18.62	<.0001*



	Marital status	3	0.56	0.6436
	Working time	2	0.34	0.7103
Causes outside of work	Occupational level	1	20.14	<.0001*
	Marital status	3	0.53	0.6630
	Working time	2	0.19	0.8259
Causes inside the organisation				
Organisational functioning	Occupational level	1	0.90	0.3433
	Marital status	3	0.84	0.4724
	Working time	2	2.02	0.1353
Task characteristics	Occupational level	1	3.72	0.0550
	Marital status	3	1.10	0.3505
	Working time	2	1.59	0.2051
Physical working environment	Occupational level	1	10.95	0.0011*
	Marital status	3	1.26	0.2877
	Working time	2	1.69	0.1870
Career matters	Occupational level	1	2.35	0.1266
	Marital status	3	1.40	0.2433
	Working time	2	0.77	0.4664
Social matters	Occupational level	1	6.54	0.0112*
	Marital status	3	0.92	0.4309
	Working time	2	1.69	0.1871
Remuneration	Occupational level	1	1.60	0.2068
	Marital status	3	0.76	0.5179
	Working time	2	2.18	0.1148

$P \leq 0.05$

The only significant differences that were found were for the occupational level variable, in terms of level of stress (<.0001*), causes outside of work (<.0001*), the physical working environment (0.0011) and social matters (0.0112).

Table 5.19: Occupational stress and occupational level

Element	Occupational level	Mean	Stress level
Level of stress	Nursing students	83.65	High
	Nurses	72.37	Normal
Causes outside of work	Nursing students	35.60	High
	Nurses	29.06	Normal
Causes within the organisation			
Organisational functioning	Nursing students	17.08	Normal
	Nurses	17.03	Normal
Task characteristics	Nursing students	43.80	Normal
	Nurses	41.97	Normal
Physical working conditions	Nursing students	16.32	High

	Nurses	20.36	Normal
Career matters	Nursing students	22.65	Normal
	Nurses	21.72	High
Social matters	Nursing students	22.21	Normal
	Nurses	20.20	High
Remuneration	Nursing students	19.56	High
	Nurses	18.86	High

Table 5.19 indicates that nursing students experienced a high level of stress compared with full-time nurses who experienced normal levels of stress. Nursing students attributed high stress levels to causes outside of work. Nursing students found physical working conditions increased occupational stress, while full-time nurses found normal levels of physical working conditions attributing to occupational stress. Career matters were reported as creating high occupational stress among full-time nurses, while they created normal occupational stress among nursing students. Full-time nurses regarded social matters as causing high occupational stress, while nursing students found social matters led to normal levels of occupational stress. Remuneration seems to cause high stress levels among nurses and nursing students.

Table 5.20: ANOVA: occupational stress and occupational level

Element	DF	F-Value	Pr > F
Level of stress	1	18.62	<.0001*
Causes outside of work	1	20.14	<.0001*
Causes inside the organisation			
Organisational functioning	1	0.90	0.3433
Task characteristics	1	3.72	0.0550
Physical working conditions	1	10.95	0.0011*
Career matters	1	2.35	0.1266
Social matters	1	6.54	0.0112*
Remuneration	1	1.60	0.2068

The alpha value is equal to 0.05. If the probability (Pr) is less than the alpha value, then there is a relationship between the variables. From the ANOVA table, it can be seen that the level of stress and causes outside the organisation are less than 0.05. Therefore, there is a relationship between occupational level and occupational stress.

5.7 INTEGRATION OF THE RESEARCH FINDINGS

The objective of this study was to investigate, analyse and determine whether there is a relationship between the level of occupational stress and locus of control among nurses. The second objective was to determine which stressors cause the highest level of stress among the sample. The third objective was to determine whether externals or internals experience

greater levels of occupational stress, and lastly, to determine whether there is a relationship between occupational stress and demographics such as marital status, working time and occupational level.

Overall, the findings suggest that there is a negative relationship between occupational stress and locus of control. The following demographic characteristics should be taken into account when interpreting the results:

- the participants were predominantly represented by nursing students currently studying a nursing degree at the University of Pretoria;
- the dominant gender among the participants was female;
- the predominant age group was between 40 and 49;
- the participants were mainly married;
- Africans were the dominant race group among the participants;
- the majority of the participants were registered nurses; and
- approximately half of the participants worked the day shift.

5.5.1 The first objective: to determine whether there is a relationship between occupational stress and locus of control among nursing students and nurses, currently studying at the University of Pretoria and in the employment of private and public healthcare facilities

The findings indicate that there is a negative relationship between the level of occupational stress and locus of control. This correlation therefore indicates that the nurse's locus of control orientation has an influence on his/her stress level; as a consequence if a participant has an external locus of control, the level of stress that he/she experiences will be high. In contrast, if an individual has an internal locus of control, his/her perceived stress level will be low.

In summary, the participant's level of stress is thus determined by his/her position on the locus of control continuum as discussed in Chapter 2.

Although the results indicate that the stress level of a participant with an internal locus of control will be low, it did however indicate that the stress levels of participants with an internal locus of control were affected by (1) remuneration, fringe benefits and the personnel policy, and (2) task characteristics. The reason for this phenomenon might be the fact that the participant does not have personal control over these elements in the organisation. For

example, remuneration, fringe benefits and the personnel policy are determined by the human resource manager or head of department; and the task characteristics are determined by the participant's direct line manager. Therefore, he/she does not have control over these elements and cannot change it.

The results in addition indicate that the stress levels of external locus of control participants was influenced by (1) organisational functioning, (2) the working conditions, (3) career matters, and (4) social matters; whereas the internals were not affected at all.

These findings were also confirmed in the literature review (Carrim, 2006; Graffeo & Silvestri, 2006; Singh, 2006), namely that internals believe that their behaviour is guided by their personal decisions and efforts and not by fate, luck or external circumstances. The participants are thus less likely to experience high levels of stress, because they are in control of their lives. As a result, if a person feels that he/she is in control of a particular situation, the likelihood is that he/she will be less likely to experience the situation as threatening or stress-inducing. According to Wolk and Bloom (1978), internals are more successful in dealing with environmental demands than externals. Phares (1976) concludes that this ability of internals to master the environment has been recognised as one of the most consistent behavioural correlates of locus of control. Externals tend to experience a situation as a threat, because they believe that they are not in control; whereas an internal will perceive the environment as controllable (Ades *et al.*, 2008). Externals will therefore make less effort to change or improve their situations; hence they will experience a greater degree of stress (Arslan *et al.*, 2009). Externals will consequently feel more inadequate, perceive higher degrees of anxiety and depression (Dunn *et al.*, 2007), and are less strong and flexible. An individual with an internal locus of control will therefore be challenged by a stressor, whereas an external will be threatened by it.

The results in addition indicate that the nursing students experienced higher stress levels than the nurses. This phenomenon is confirmed by a study conducted by Watson *et al.* (2008). These researchers found that nursing students experience stress due to (1) separation from home, (2) financial worries, (3) regular clinical and educational assessment, (4) entering the organisation for the first time, and (5) a lack of confidence and exposure to unfamiliar circumstances. The empirical research study found that (1) causes outside the organisation, (2) the working conditions, and (3) remuneration, fringe benefits and the personnel policy affect the student's perceived level of stress.

In summary, a relationship is confirmed between occupational stress and locus of control.

5.5.2 *The second objective: to determine which stressors cause the highest level of stress among the sample*

First of all, it is important to note that the population did experience some level of stress (mean = 80.14). The results additionally point out that 52.7% experienced moderate to normal levels of stress, and 28.2% experienced a high level of stress.

Secondly, the aim of the empirical study was to determine which stressors cause the highest level of stress among the sample. The results indicate that the following stressors/elements were the highest:

1. causes outside the work situation;
2. organisational functioning;
3. physical working conditions;
4. career matters;
5. social matters; and
6. remuneration.

These results were confirmed in the literature review conducted in Chapter 3.

5.5.3 *The third objective: to determine whether externals or internals experience greater levels of occupational stress*

The results indicate that the majority of the participants had an internal locus of control (mean = 11.53); and experienced the least amount of stress.

In terms of Table 5.16, one could observe that the participants with an internal locus of control (mean \geq 11.50) experienced less stress than the participants with an external locus of control (mean \leq 11.50). These results were furthermore confirmed by the literature review as discussed in Chapter 2 and Section 5.5.1.

In summary, an internal locus of control will lead to reduced stress levels.

5.5.4 The fourth objective: to determine whether there is a correlation between occupational stress and demographics such as marital status, shift work and occupational level

The results indicate that married (58.11%) and divorced/separated (7.09%) nurses experienced higher levels of stress (mean married = 81.18; mean divorced/separated = 82.04). This might be due to the fact that married and divorced/separated employees not only experienced stress and pressure at work but also at home. Married employees have to provide for their families; while a single divorced parent has to take care of their children while working an eight- to 12 hour shift.

According to the results, the causes of occupational stress among the married and divorced/separated participants include (1) the organisational functioning, (2) physical work environment, and (3) remuneration, fringe benefits and the personnel policy.

Secondly, the findings indicate that employees who work both the day and night shift (mean = 81.24) will experience higher levels of stress than the employees who work only the day (mean = 79.31) or night shift (mean = 79.64). The demographical information also indicates that 39.6% of the participants worked both shifts.

According to the literature findings in Chapter 3, shift work is one of the most commonly researched elements among nurses as it has a major influence on the individual's working environment, health and safety and personal life (Beau, 2006; Ida, *et al.*, 2008; Lee, 2003; Muncer *et al.*, 2001; Rowe & Sherlock, 2005). The participants who worked both shifts in addition also indicated that the following elements caused the highest level of stress: (1) organisational functioning, (2) the physical working environment, (3) career matters, (4) social matters, and (5) remuneration and fringe benefits.

Lastly, as indicated in the previous section, nursing students (mean = 83.65) seem to experience more stress than the nurses (mean = 72.37). This phenomenon might be explained by (1) the research conducted by Watson *et al.* (2008) (as discussed in Section 5.5.1), and (2) the fact that nursing students are at the early career stage. According to Greenhaus *et al.* (2000), the main task at this stage is to select a job and an organisation in one's chosen career field; but often the career and organisation selection is based on incomplete or unrealistic information. The result is thus occupational stress and job dissatisfaction.

In summary, the objectives as set out in Chapter 1 were achieved in this chapter.

5.8 SUMMARY OF HYPOTHESES

In this section, the researcher will determine whether the hypotheses were accepted or rejected. These findings are displayed in Table 5.21.

Table 5.21: Hypotheses summary

Hypothesis		Decisions
<i>Hypothesis 1</i>		
H ₁	A nurse with an internal locus of control will experience higher stress levels than a nurse with an external locus of control.	Rejected
H ₀	A nurse with an internal locus of control will not experience higher stress levels than a nurse with an external locus of control.	Accepted
<i>Hypothesis 2</i>		
H ₂	A nurse with an external locus of control will experience higher stress levels than a nurse with an internal locus of control.	Accepted
H ₀	A nurse with an external locus of control will not experience higher stress levels than a nurse with an internal locus of control.	Rejected
<i>Hypothesis 3</i>		
H ₃	Locus of control will determine the stress level experienced by a nurse.	Accepted
H ₀	Locus of control will not determine the stress levels of a nurse.	Rejected.

To summarise: under Hypothesis 1, the null hypothesis was accepted because a nurse with an internal locus of control will not experience higher stress levels than a nurse with an external locus of control; therefore Hypothesis 2 alternative hypothesis was accepted, namely that a nurse with an external locus of control will experience higher stress levels than a nurse with an internal locus of control. As a result, the alternative hypothesis of Hypothesis 3 was accepted; because the nurse's locus of control will determine the level of stress of a nurse.

The stages in the empirical investigation have now been completed and the questions have been answered whether there is a relationship between the occupational stress and locus of control among nurses in a South African context.



5.9 CHAPTER SUMMARY

In this chapter, the results of the empirical investigation were reported and investigated in order to determine whether there is a relationship between the occupational stress and locus of control among nurses.

In Chapter 6, the conclusions and limitations of the study will be discussed; as well as recommendations for future research.

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter concludes the study by focusing on the conclusions drawn from the research study. This chapter will furthermore discuss the limitations and make recommendations for human resource practitioners in terms of the relationship between occupational stress and locus of control and possible future research studies.

6.2 CONCLUSIONS

The following conclusions were drawn from the literature review and empirical investigation:

6.2.1 Conclusions based on the literature review

The objective of this study was to determine whether there is a relationship between occupational stress and locus of control. The general aim was achieved, because the specific set of objectives was achieved.

Conclusions were drawn in terms of each of the specific aims regarding the relationship between occupational stress and locus of control.

6.2.1.1 The first objective: to determine whether there is a relationship between occupational stress and locus of control from a theoretical perspective

The first objective, namely to determine whether there is a relationship between occupational stress and locus of control from a theoretical perspective, was discussed and achieved in Chapter 2 (The relationship between occupational stress and locus of control).

The following conclusions are drawn:

Based on research conducted in various fields of psychology, one could establish that personal control (also known as locus of control) plays an important role in one's experiences of occupational stress (Smith, 2003). In order to comprehend this relationship, it is, firstly,

important to understand what the variables mean. The most well-known definition of *stress* was developed by Hans Selye in 1956. He found that stress affects the body's reaction and mobilisation when faced with a challenge or threat. Therefore, when a person is faced with a stressor in the environment with which he/she cannot cope (the environmental stressor thus exceeds the person's resources), the stressor is viewed as a threat to the individual's well-being. Secondly, the term *locus of control* was developed by Julian B. Rotter in 1954, and is used to elucidate a person's expectancies, those outcomes of his/her behaviour that can be/are controlled (Bergh & Theron, 2007; De Mooij, 2010). One's locus of control therefore refers to the individual's belief that he/she can control events that affect him/her.

Individuals thus differ according to their expectation regarding successes and failures. An individual who believes that he/she has a strong control over what he/she accomplishes is referred to as having an internal locus of control; whereas a person with an external locus of control believes that his/her accomplishments are due to luck, fate and other people or circumstances. Individuals with an external locus of control therefore believe that what happens to them is due to outside forces.

Lu *et al.* (1999) found that there is a linear relationship between locus of control and self-reported psychopathology; therefore it was assumed that there is a relationship between locus of control and stress. The findings in the literature review confirmed that internals are more likely to perceive less stress than externals; because internals believe that they are in greater control over their work environment (Pretorius, 2004), whereas externals have the tendency to adopt psychological and physical symptoms to stressful life events. Internals tend to believe that their own competence and high performance standards are due to their own efforts, skills, knowledge and abilities. An internal will rely on his/her efforts and abilities when completing a task and will obtain relevant information in difficult task situations; therefore his/her performance efforts will also increase (Smith, 2003).

Researchers furthermore found that internals believe that they are in control of their lives; therefore, they view themselves as competent and will experience less stress (Singh, 2006). Externals, on the other hand, might feel weak and less in control; therefore, they tend to experience higher levels of stress. In summary, if a person feels that he/she is in control of a particular situation, the likelihood that he/she will experience the situation as stressful or threatening will be less. Internals are for that reason, more successful in confronting environmental demands (Wolk & Bloom, 1978).

Externals will make less effort to change or improve their situation; and consequently experience a higher degree of stress. As a result, the external will feel more inadequate and perceive higher degrees of anxiety and depression. Bernardi (2001) therefore found that an internal locus of control could be used as a stress buffer; as an individual with an internal locus of control is challenged by a stressor, whereas an external is threatened by it.

In summary, the literature confirmed that there is a relationship between one's locus of control orientation and occupational stress.

6.2.1.2 The second objective: to analyse and investigate the nature of nurses' work; and to determine whether nurses with an internal or external locus of control experience higher levels of occupational stress

The second objective, namely to analyse and investigate the nature of nurses' work, and to determine the sources of stress and how they influence the nurses' working conditions and personal lives, was achieved in Chapter 3 (the nature of nurses' work).

The following conclusions were drawn:

From the literature, it is evident that nurses work in an environment which is physically and mentally demanding (Kane, 2009). Although they generally spend their time in a comfortable healthcare facility, such as a hospital; the environment has certain demands to which the employee has to adapt (Mangaoang, 2011).

Their duties furthermore include intensive patient care; which include taking samples and running laboratory tests, taking the patient's vital signs and symptoms, asking him/her personal questions regarding his/her health (Bureau of Labour Statistics, 2010), start and cease the intravenous (IV) lines for fluid, medication and blood, provide support to the patient's family and friends, and educate them about their loved one's condition (Onet Online, 2010a). They furthermore have to have the necessary competencies to operate medical machinery, administer medications and treatment.

In addition, a nurse's environment includes constant communication and contact with the patient, doctors, physicians and fellow colleagues. Nurses have to provide feedback to the patient's doctor or physician regarding his/her status/progress and treatment options (Onet Online, 2010a).

As a result, Aucamp (2003), French and Cur (2008), Naudé and Rothmann (2006), Piko (1999) and Van der Colff (2005) found that occupational stress is a major concern in the healthcare sector, because nursing is considered to be inherently stressful. The literature furthermore signifies that nurses experience various stressors, which range from organisational stressors to environmental stressors. These stressors were discussed in Chapter 3.

In summary, the major stressors affecting a nurse were identified as: (1) workload, (2) inadequate resources, (3) lack of job control and non-nursing duties, (4) social support and interpersonal relationships, (5) leadership and relationships with supervisors, (6) organisational structure, (7) autonomy, (8) decision-making, (9) lack of knowledge and skills, (10) working shifts, overtime and long hours, (11) rewards, remuneration and promotion, (12) critically ill patients and caring for them, (13) HIV/aids, (14) death and dying patients, (15) machinery (equipment) and technology, (16) the operating room, (17) the nursing shortage, (18) personality, (19) years of experience, and (20) physical, emotional and verbal abuse.

It was found that these stressors not only affect the individual's physical health and emotional well-being, but also the effectiveness of the organisation. The consequences were classified in terms of individual distress and organisational distress. Individual consequences were furthermore classified in terms of psychological, physiological and behavioural symptoms (Spies, 2004).

In summary, the major consequences of individual stress were identified as dissatisfaction at work, anxiety (Salleh *et al.*, 2008), self-conflict (Chen *et al.*, 2009), irritability, negativism, loss of ability to concentrate, emotional exhaustion (Golubic *et al.*, 2009, Healy & McKay, 2000), insomnia and restlessness, fatigue (burnout) (Doncevic *et al.*, 1998; Healy & McKay, 2000; Salleh *et al.*, 2008) and eventually depression (Chen *et al.*, 2009; Salleh *et al.*, 2008). The physical consequences identified were an increased heart rate and coronary heart diseases (Doncevic *et al.*, 1998), hypertension, galvanic skin responses and respiration, ulcers, immune system suppression, musculoskeletal injuries (Shamian, 2003) such as back pain (Golubic *et al.*, 2009), an increased blood pressure or cholesterol, and adrenaline and gastric acid production. Lastly, behavioural symptoms identified were a sudden change in smoking habits and an increase in alcohol consumption, overeating, absenteeism, frequent visits to healthcare providers and suicide.

The stress experienced by the individual and the consequences thereof will eventually effect the organisation. Distress was generally found to be associated with a reduced organisational effectiveness, illness which might lead to an increase in absenteeism and a high turnover, resulting in direct costs, and occupational accident rates, counselling referrals, alcohol and drug abuse, poor practice quality, increased healthcare costs and job dissatisfaction. Spies (2004) and Van der Colff and Rothmann (2008) furthermore found that indirect costs are another consequence of stress to the organisation; these include strikes, work stoppages, accidents, unscheduled downtime, overuse of materials and supplies, inventory shrinkages, quantity and quality of services and care provided.

In summary, the findings suggest that nurses' work environment is demanding, challenging and stressful. There are thus various environmental and organisational stressors leading to certain consequences which negatively affect the employee and the organisation.

6.2.2 Conclusions based on the empirical study

The research tasks or objectives that were formulated were:

1. to determine whether there is a relationship between occupational stress and locus of control among nursing students and nurses currently studying at the University of Pretoria and in the employment of private and public healthcare facilities;
2. to determine which stressors cause the highest level of stress among the sample;
3. to determine whether externals or internals experience greater levels of occupational stress; and
4. to determine whether there is a correlation between occupational stress and demographics such as marital status, working time and occupational level.

Based on the findings, Hypotheses H2 and H3 were accepted and H1 was rejected. Findings of each of these research objectives and hypotheses will be summarised and discussed as conclusions.

6.2.2.1 The first objective: to determine whether there is a relationship between occupational stress and locus of control among nursing students and nurses, currently studying at the University of Pretoria and in the employment of private and public healthcare facilities respectively.

The following conclusions were drawn:

Conclusion: there is a negative relationship between occupational stress and locus of control. The results indicate that there is a “weak” negative relationship between the level of stress and locus of control. This means that the two variables are related; thus as the value of one variable increases, that of the other will decrease. In this research study, the participant’s locus of control will have an effect on his/her stress level. Consequently, a participant with an internal locus of control will experience lower stress levels than a participant with an external locus of control.

In summary, one can conclude that the participant’s location on the locus of control continuum will have an effect on his/her stress level.

6.2.2.2 The second objective: to determine which stressors cause the highest level of stress among the sample

The following conclusions were drawn:

According to the results obtained, the level of stress among the sample was relatively high (mean = 80.14); therefore one can assume that the participants did experience stress in the organisation. The participants in addition indicated that the stressors that caused the highest level of stress were causes outside the organisation and organisational functioning.

Causes outside the organisation include family problems, financial circumstances, phase of life, the general economic situation in the country, changing technology, facilities at home, social situations, status, health, background, effect of work on home life, transport facilities, religious life, political views and the availability of accommodation and recreational facilities.

Organisational functioning, on the other hand, deals with the employee’s expectations regarding a share in decision-making, trust in supervisor(s), effective organisational structure, a positive management climate, recognition of work done well and open communication channels with the supervisor.

In contrast, remuneration, fringe benefits and personnel policy and causes in the work situation were indicated as the circumstances and experiences which caused the least amount of stress. (This finding is in contrast to the findings in the literature review, as discussed in section 5.5.2).

6.2.2.3 The third objective: to determine which locus of control orientation causes the highest level of stress among the sample

The following conclusion was drawn:

According to the research findings, the majority of the participants have an internal locus of control (mean = 11.53). Therefore, the amount of stress experienced by the participants will not be high.

In summary, the empirical research findings indicate that individuals with an external locus of control will experience high to very high levels of stress.

6.2.2.4 The fourth objective: to determine whether there is a correlation between occupational stress and demographics such as marital status, working time and occupational level

The following conclusions were drawn:

1. *Marital status*

The results indicate that married and divorced/separated nurses experienced high levels of stress; while unmarried and single-parent nurses experienced normal levels of stress. Single-parent nurses found the cause of occupational stress to be high outside work. Divorced/separated, single and unmarried nurses experienced normal causes of occupational stress outside work. Married and single-parent nurses found organisational functioning causing high levels of stress in the organisation. Unmarried and divorced/separated nurses found normal levels of stress relating to organisational functioning in the organisation. Unmarried, married and single-parent nurses experienced physical working conditions leading to high occupational stress, while divorced/separated nurses experienced normal occupational stress related to physical working conditions. High occupational stress was reported by unmarried, married and divorced/separated nurses while very high occupational stress was reported by single-parent nurses.

There is furthermore no relationship between occupational stress and marital status.

2. *Working time*

Nurses working night and day shifts experienced high occupational stress in terms of level of stress, causes outside of work, organisational functioning, physical working conditions, career matters and remuneration. Day-shift nurses, as well as night-shift nurses, experienced high occupational stress in terms of physical working conditions and remuneration. Night-shift nurses experienced high occupational stress in terms of social matters.

There is no relationship between occupational stress and working time.

3. *Occupational level*

The results show that nursing students experienced a high level of stress compared with full-time nurses who experienced normal levels of stress. Nursing students attributed high stress levels to causes outside of work. Nursing students found physical working conditions increased occupational stress, while full-time nurses found normal levels of physical working conditions attributing to occupational stress. Career matters were reported as creating high occupational stress among full-time nurses, while they created normal occupational stress among nursing students. Full-time nurses regarded social matters as causing high occupational stress, while nursing students found social matters led to normal levels of occupational stress. Remuneration seems to cause high stress levels among nurses and nursing students.

There is thus a relationship between occupational level and occupational stress.

6.2.3 Conclusions regarding the central hypotheses

The hypotheses of the study state that one's locus of control will determine the levels of stress; and that a nurse with an external locus of control will experience higher stress levels than a nurse with an internal locus of control. The hypothesis was accepted, because the study provided statistically significant evidence to support the hypothesis.

6.3 LIMITATIONS

Several limitations in terms of the literature review and empirical study have been identified. The limitations of the study will be discussed in the following section.

6.3.1 Limitations of the literature review

Limitations regarding the literature review include a lack of research in the South African context on:

- the relationship between occupational stress and locus of control;
- how the locus of control orientations (elements) differ relating to locus of control in nurses;
- a comprehensive discussion of the nature of nurses' work; and
- the sources of stress among nurses and how they impact on the organisation.

Although there is literature available on occupational stress and locus of control, few studies have focused on the *relationship* between the constructs; and there was little or no information on the relationship between these two variables from a nursing perspective. The majority of research studies conducted in the nursing environment were directed towards occupational stress.

Secondly, the researcher had difficulties finding literature regarding the differences between individuals with an internal and external locus of control. The majority of the studies only gave a brief overview of the construct, for instance, the origin of the term *locus of control* and then a brief description of the different orientations. The researcher was more interested in how individuals with an external and internal locus of control experienced occupational stress, which coping mechanism they apply in a stressful situation and their overall functioning in an organisation.

Thirdly, it was difficult to obtain information regarding the nature of a nurse's work environment. Once again, the studies only gave a brief introduction and the various elements were summarised in one paragraph, but it was not extensively discussed or described. The researcher was not only interested in the day-to-day duties of the nurse but also the environment in which he/she has to function. Another limitation was the fact that there was limited research available from a South African perspective. Several studies were conducted in the United States of America (especially Canada) and Asia (Taiwan, China and Japan), but not in South Africa.

Lastly, information regarding the sources and consequences of stress among nurses was difficult to obtain. Previous researchers only mentioned the sources and consequences, but did not discuss them in order for the researcher to obtain a clear understanding of the

stressor and the consequences thereof. Once again, limited research was available from a South African perspective.

6.3.2 Limitations of the empirical study

Limitations regarding the empirical study are summarised in this section.

6.3.2.1 Limitations regarding the chosen sample

Due to the small sample size one cannot be certain that these relationships and differences are true for a larger, heterogeneous group. The results were moreover influenced by the fact that the sample was not equally represented. The following predominances were identified: (1) the nature of the participants (they were predominantly represented by nursing students studying at the University of Pretoria), (2) more females than males, (3) the participants were between the ages of 40 and 49, (4) the participants were mainly married, (5) Africans were the predominant race group and (6) the majority of the group were registered nurses. Therefore, the sample was not a truly balanced group, and might have a negative impact on the potential to generalise the results to the broader multicultural and diverse South African population.

In summary, it was overall difficult to obtain literature that is applicable to the current study from a South African perspective.

6.3.2.2. The sampling method

Simple random sampling, which was applied in this research study, could have a negative effect on the generalization of the findings. As mentioned in Section 6.3.2.1, the results can therefore only be applied/generalised to the population and not wider.

6.3.2.3 The research design

In this research study, a descriptive research design, namely survey research, was used. Although survey design has various advantages, one disadvantage might be the fact that the researcher relies on self-report data. Thus, the participants reflect on what *they* believe is true or perhaps what *they* think the researcher wants to hear. Their attitudes and opinions

may furthermore be created on the spot; therefore they might not have thought about the issue until the researcher questions them.

The validity of the results is therefore in question.

6.3.2.4 *Rotter's 23-item scale*

Rotter's 23-item scale was developed in 1966; therefore this instrument is several decades old. It might therefore not be the best instrument to use in modern research. The language and terms used might also be outdated, which should furthermore be refined.

6.3.2.5 *The results of "the level of stress" of the participants*

The level of stress that the participants experienced during the time of completing the questionnaire might be higher than in normal circumstances due to the fact that (1) the country was in the middle of an economic recessions, the recession therefore placed increased pressure and stress on all individuals and organisations, (2) the participant was furthermore taken from his/her current duty/task to complete a questionnaire. Nurses in particular work in a highly demanding environment; therefore they are under intense time pressures to attend to their patients. By asking them to complete a questionnaire only agitates them more, which might increase the stress level.

6.3.2.6 *The statistical methods used*

Due to the "inequalities" in the biographical group, some statistical methods could have been used differently to distribute the results more evenly.

Despite the aforementioned limitations, the results of the study show prospects for the analysis of the relationship between occupational stress and locus of control. This study may be used as a basis to understand the relationship between the variables measured.

6.4 **RECOMMENDATIONS**

Based on the findings, conclusions and limitations of the study, the following recommendations can be made regarding occupational stress and locus of control in an organisation and for future studies:

6.4.1 Recommendations for the field of human resource management

The main objective of this study was to determine the relationship between occupational stress and locus of control. As the findings indicate, one's locus of control has an influence on one's level of stress. Therefore, it is important for a human resource practitioner to take into account that an individual's perceived level of stress will differ due to his/her personality orientation. As confirmed in the literature review and empirical study findings, an individual with an internal locus of control will experience less stress than an individual with an external locus of control. It is therefore advisable for a human resource practitioner to be aware of his/her staff's personality orientation in order to assist the employee in reducing the stressors that he/she might face on a day-to-day basis.

This phenomenon was confirmed in the observation and analysis of a nurse's work environment. As indicated and highlighted during the research, a nurse's work environment is demanding and stressful; and nurses experience various stressors in this work environment. As in any other organisation, an employee will at some point be exposed to pressure and stress in his/her day-to-day activities, which will eventually lead to negative consequences, having an impact on the employee's health and well-being and ultimately on the success of the organisation.

Therefore, by identifying an employee's personality orientation (locus of control), a human resource practitioner will be able to determine which stressors affect the employee the most and reduce these stressors and prevent the negative consequences that affect the employee and the organisation. In turn the human resource practitioner will be able to reduce absenteeism and illness, turnover, job dissatisfaction and increase the employee's health and well-being, patient care and safety and the overall morale of the workforce. The human resource practitioner will, as a result, make a valuable contribution to both the employee and the organisation.

In summary, it is therefore recommended that a human resource practitioner be aware of his/her employees' personality orientation and perceived level of stress; and to have support and coping strategies/programmes available, which will assist the employees in reducing the stressors that cause day-to-day dilemmas for the employee in their work environment.

6.4.2 Future research

After taking the conclusions and limitations of the study into account, the following recommendations can be made for future research possibilities:

Firstly, there is a need for further research on the relationship between occupational stress and locus of control in the South African context. It is recommended that future studies deal with the limitations identified in this study. This study was limited to a relatively small sample of registered nurses who were predominantly African females, between the ages of 40 and 49; therefore it is recommended that future studies include a larger, more representative sample.

Secondly, in addition to further researching the relationship between occupational stress and locus of control, there is a need to investigate and research the nurses' work environment, the stressors that cause occupational stress and the consequences thereof. One could furthermore investigate the different personality orientations in order to determine how the work environment and stress affect each individual.

Thirdly, further research could be conducted in order to examine the relationship between occupational stress and locus of control in terms of different occupations and/or industries. The results might confirm or reject the generalisability of these findings when compared with a broad spectrum of occupational categories.

Lastly, other methodologies could be used to further investigate research opportunities in order to provide a greater depth in understanding these constructs.

6.5. INTEGRATION OF THE RESEARCH

The literature review indicated that there is a significant relationship between occupational stress and locus of control.

The empirical study explored the relationship between occupational stress and locus of control. It is necessary for human resource practitioners to understand that individuals with different locus of control orientations will perceive and experience stress and the work environment differently. Such an understanding will enable human resource practitioners to

assist the employee through formulation coping strategies and stress assistance strategies. This assistance will furthermore add significance to the organisation.

The study made a valuable contribution to the understanding of how locus of control relates to occupational stress, and vice versa. It is therefore recommended that the information which is obtained from this research study be applied in an organisational setting in order to reduce occupational stress among employees and improve the working conditions in the South African context.

6.6 CHAPTER SUMMARY

This chapter discussed the conclusions drawn from this study, as well as the possible limitations of the study, by focusing on both the literature review and the empirical study. Recommendations were made for the human resource practitioner, as well as for future research. Finally, an integration of the study was presented by highlighting the support findings for the existence of a relationship between occupational stress and locus of control.

Herewith the study is concluded.

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APPENDIX A

PERMISSION TO CONDUCT RESEARCH STUDY WITHIN YOUR ORGANISATION

Dept. of Human Resource Management

THE RELATIONSHIP BETWEEN OCCUPATIONAL STRESS AND LOCUS OF CONTROL AMONG NURSES

Research conducted by:

Ms. M. van Niekerk (25274172)

Cell: 082 568 1576

To whom it may concern

You are invited to participate in an academic research study conducted by Melissa van Niekerk, a Masters student from the Department of Human Resource Management at the University of Pretoria.

The purpose of the study is to determine if there is a relationship between occupational stress and one's locus of control.

Please note the following:

- This study involves an anonymous survey. Your name will not appear on the questionnaire and the answers you give will be treated as strictly confidential. You cannot be identified in person based on the answers you give.
- Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- Please answer the questions in the attached questionnaire as completely and honestly as possible. This should not take more than 60 minutes of your time.
- The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request.
- Please contact my supervisor, Ms. N. Carrim ('nasima.carrim@up.ac.za') if you have any questions or comments regarding the study.

Please sign the form to indicate that:

- You have read and understand the information provided above.
- You give your consent or permission of your employees to participate in the study on a voluntary basis.

Signature

Date



QUESTIONNAIRE

Dear Respondent

Thank you for your time and willingness to participate in this study. The purpose of this study is to determine the level and causes of stress.

This questionnaire should not take longer than 60 minutes to complete. The information produced in this questionnaire will be kept confidential at all times and your identity will be kept anonymous. The answers you provide in this questionnaire will only be used for academic purposes.

Please answer **all** the questions. There is no right or wrong answer.

SECTION A: BIOGRAPHICAL QUESTIONS

Instructions: Please indicate your response to the following questions by making an **X** next to the appropriate answer on the answer sheet.

1	What is your age?	
	< 21 years	
	21 – 29 Years	
	30 – 39 years	
	40 – 49 years	
	50 – 59 years	
60 + years		

2	What is your gender?	
	Male	
	Female	

3	What is your marital status?	
	Unmarried	
	Married	
	Divorced	
	Single parent	
Separated		

4	How many dependants do you have?	
	1	
	2	
	3	
	4	
	5	
More than 5		



5	What is your highest qualification?	
	Grade 12	
	Diploma	
	Degree	
	Post graduate qualification	
	Other	
	Occupational Health Nurse	
	Licensed Vocational Nurse	

6	What is your home language?	
	Afrikaans	
	English	
	Ndebele	
	Northern Sotho	
	Shangaan	
	Southern Sotho	
	Swazi	
	Tsonga	
	Tswana	
	Venda	
	Xhosa	
	Zulu	
	Other	

SECTION B: WORK AND LIFE CIRCUMSTANCES QUESTIONNAIRE

GENERAL INSTRUCTIONS

The questionnaire contains questions on feeling that you have experienced in your life.

The following should be taken into account as a general guide when answering the questions:

- Do not ponder over a question for too long – read it and indicate the first reaction that comes to mind spontaneously.
- Make sure that you do not skip questions. Some questions may perhaps seem very personal, but remember that your answers will be treated *strictly confidential*.
- There are no right or wrong answers. The best results will be obtained when you indicate your true feelings.

The questionnaire consists of two parts. The first part deals with your experiences in your work and the second part with your circumstances and expectations. Read the specific instructions and then answer the questions following these instructions. Make a **X** at the appropriate answer.



SPEIFIC INSTRUCTIONS

Experience of work

This part contains questions on feelings that you perhaps experience in your work.

Indicate below Scale A how frequently a particular feeling occurs by writing down any figure from 1 to 5. Scale A is as follows:

- 1 = Virtually never**
- 2 = Sometimes**
- 3 = Reasonable often**
- 4 = Very often**
- 5 = Virtually always**

Use this scale to answer each of the questions.

<p><i>Example</i></p> <p>How often do you feel...</p> <p>Restless?</p>				
1	2	3	4	X
<p>Based on this example the deduction can be made that the person feels restless virtually always.</p>				

Now answer Questions 1 – 40 (under scale A) on the answer sheet.

Scale A:

- 1 = Virtually never**
- 2 = Sometimes**
- 3 = Reasonable often**
- 4 = Very often**
- 5 = Virtually always**

How often in your work do you feel...

1. as if you are coming up against a wall and simply cannot make progress?

1	2	3	4	5
---	---	---	---	---

2. afraid, not knowing of what exactly?

1	2	3	4	5
---	---	---	---	---



3. uncertain (unsure, doubtful)?

1	2	3	4	5
---	---	---	---	---

4. worried?

1	2	3	4	5
---	---	---	---	---

5. that your views clash with those of another person?

1	2	3	4	5
---	---	---	---	---

6. that you are experiencing conflict?

1	2	3	4	5
---	---	---	---	---

7. bored?

1	2	3	4	5
---	---	---	---	---

8. irritated (annoyed)?

1	2	3	4	5
---	---	---	---	---

9. that you have no confidence in yourself?

1	2	3	4	5
---	---	---	---	---

10. that you depend on too much on the help of others?

1	2	3	4	5
---	---	---	---	---

11. alone?

1	2	3	4	5
---	---	---	---	---

12. that you would like to attack another person?

1	2	3	4	5
---	---	---	---	---

13. that you merely accept things as they are?

1	2	3	4	5
---	---	---	---	---

14. that you are disturbed whenever you work hard at something?

1	2	3	4	5
---	---	---	---	---

15. that you are losing control of your temper?

1	2	3	4	5
---	---	---	---	---

16. that no-one wants to support you?

1	2	3	4	5
---	---	---	---	---



17. that your work situation compares unfavourably with those of others?

1	2	3	4	5
---	---	---	---	---

18. despondent (Cheerless, down)?

1	2	3	4	5
---	---	---	---	---

19. that you have broken some rule or other?

1	2	3	4	5
---	---	---	---	---

20. inferior (no self-confidence, unimportant)?

1	2	3	4	5
---	---	---	---	---

21. that someone and/or a situation is annoying you terribly?

1	2	3	4	5
---	---	---	---	---

22. guilty?

1	2	3	4	5
---	---	---	---	---

23. downhearted?

1	2	3	4	5
---	---	---	---	---

24. fearful?

1	2	3	4	5
---	---	---	---	---

25. that you can do nothing about a situation?

1	2	3	4	5
---	---	---	---	---

26. aggressive (want to hurt someone/break something)?

1	2	3	4	5
---	---	---	---	---

27. that you are getting sad?

1	2	3	4	5
---	---	---	---	---

28. overburdened (too much work/responsibility)?

1	2	3	4	5
---	---	---	---	---

29. angry?

1	2	3	4	5
---	---	---	---	---

30. afraid without knowing whether you are afraid of a particular person and/or situation?

1	2	3	4	5
---	---	---	---	---



31. not exactly sure how to act?

1	2	3	4	5
---	---	---	---	---

32. that you are having trouble concentrating since you are worried about something?

1	2	3	4	5
---	---	---	---	---

33. that you have no interest in the activities around you?

1	2	3	4	5
---	---	---	---	---

34. that you need assistance continuously?

1	2	3	4	5
---	---	---	---	---

35. that you do not wish to participate in anything?

1	2	3	4	5
---	---	---	---	---

36. afraid of colleagues and/or supervisors?

1	2	3	4	5
---	---	---	---	---

37. that it seems as if you will never get out of this mess?

1	2	3	4	5
---	---	---	---	---

38. dissatisfied?

1	2	3	4	5
---	---	---	---	---

39. that you are tearful (weeping, sorrowful)?

1	2	3	4	5
---	---	---	---	---

40. that you have too much responsibility and too many problems?

1	2	3	4	5
---	---	---	---	---

Circumstances and expectations

This part contains questions on the nature of your circumstances and on your expectations.

Circumstances

Questions are asked about the way you feel about important circumstances within and outside your work.

Indicate below Scale B how often particular circumstances occur by writing down any figure from 1 to 5. Scale B is as follows:

- 1 = Virtually never
- 2 = Sometimes
- 3 = Reasonably often
- 4 = Very often
- 5 = virtually always

Use the scale to answer each of the questions below.

<p><i>Example</i></p> <p>How often do you feel in your organization that...</p> <p>there is not sufficient opportunity for social intercourse</p>				
1	2	3	4	X
<p>Based on this example the deduction can be made that the person feels that there is virtually always insufficient opportunity for social intercourse within the organization.</p> <p>Note also that questions are asked about circumstances in your everyday life.</p>				

Now answer Questions 1 – 23 (under Scale B) on the answer sheet.

Scale B

- 1 = Virtually never
- 2 = Sometimes
- 3 = Reasonably often
- 4 = Very often
- 5 = virtually always

How often do you feel in your organization that:

1. that the organization as a whole does not function satisfactorily (for example owing to poor organization, little confidence in employees and/or incorrect leadership styles)?

1	2	3	4	5
---	---	---	---	---

2. you are dissatisfied about the nature (content) of your work (for example it is not interesting and challenging or it does not correspond with your aptitudes)?

1	2	3	4	5
---	---	---	---	---

3. you encounter one or more of the following: considerable noise, high/low temperatures, odours, gases, poor lighting, crowding of people and/or any other problem that concern your physical working conditions?

1	2	3	4	5
---	---	---	---	---

4. situations in which you find yourself, have a negative effect on the progress and development of your career (for example your weaknesses are over-emphasized and/or you find it difficult to progress to higher posts)?

1	2	3	4	5
---	---	---	---	---

5. you find it difficult to deal with social matters (such as socializing in a group and/or maintaining good interpersonal relations)?

1	2	3	4	5
---	---	---	---	---

6. you are dissatisfied with one or a few of the following: pension, medical and housing aid, bursaries, achievement bonuses, group and other insurance, salary and/or any other aspects of your remuneration package?

1	2	3	4	5
---	---	---	---	---

7. you are dissatisfied with one or more of the following: working clothes, working hours, conditions of employment, communication channels with respect to grievances and complaints, rules regarding transfers, termination of employment and/or any other regulations involving personal matters?

1	2	3	4	5
---	---	---	---	---

Note that the following questions deal with circumstances in your everyday life.

How often in our everyday life do you feel that...

8. family crises (for example death, illness and strife) have an adverse effect on your life?

1	2	3	4	5
---	---	---	---	---

9. financial obligations (for example the payment of a house loan) make life difficult for you?

1	2	3	4	5
---	---	---	---	---

10. the phase of life in which you find yourself currently (for example middle age and/or retirement) makes life difficult for you?

1	2	3	4	5
---	---	---	---	---

11. the general economic situation in the country (for example inflation) makes life exceptionally difficult for you?

1	2	3	4	5
---	---	---	---	---

12. rapidly changing technology poses a problem for you?

1	2	3	4	5
---	---	---	---	---

13. facilities (for example water laid on, electricity) at home are unfavourable?

1	2	3	4	5
---	---	---	---	---



14. social situations with friends and/or relatives are difficult to handle?

1	2	3	4	5
---	---	---	---	---

15. your status among friends and relatives sometimes causes your embarrassment?

1	2	3	4	5
---	---	---	---	---

16. your health does not allow you to do what you would like to?

1	2	3	4	5
---	---	---	---	---

17. your background (i.e. past life/where you come from) causes you embarrassment?

1	2	3	4	5
---	---	---	---	---

18. your home life is affected adversely owing to the fact that you have to spend much time on activities at work?

1	2	3	4	5
---	---	---	---	---

19. problems with transport make life difficult for you?

1	2	3	4	5
---	---	---	---	---

20. there is something wrong with your spiritual life?

1	2	3	4	5
---	---	---	---	---

21. your own views differ from those of other people?

1	2	3	4	5
---	---	---	---	---

22. inadequate provision is made for accommodation (for instance your housing is not suitable)?

1	2	3	4	5
---	---	---	---	---

23. there are too few recreational facilities (for example for golf and squash)?

1	2	3	4	5
---	---	---	---	---

Expectations

Questions are asked about the extent to which you feel that your expectations with regard to your job are realized.

Indicate according to Scale C how often the expectations referred to in the specific questions are actually realized. Scale C is as follows:

1 = Virtually never

2 = Sometimes

3 = Reasonably often

4 = Very often

5 = Virtually always



Use this scale to answer each of the following questions.

Example

How often do you feel in your organization that...

You are able to talk to your colleagues

1	X	3	4	5
---	---	---	---	---

Based on this example one could deduce that the respondent only sometimes feels that he can talk to his colleagues. Note also that, unlike in the case of the previous questions, a low score represents a negative trend while a high score represents a positive trend.

Now answer Questions 1 – 53 (according to Scale C) on the answer sheet.

Scale C:

1 = Virtually never

2 = Sometimes

3 = Reasonably often

4 = Very often

5 = Virtually always

How often do you feel in your organization that...

1. you receive recognition for what you do?

1	2	3	4	5
---	---	---	---	---

2. regulations regarding personnel matters (for example concerning working hours, conditions of employment and working clothes) reflect well on the organization?

1	2	3	4	5
---	---	---	---	---

3. you can get the work assigned to you done in time?

1	2	3	4	5
---	---	---	---	---

4. you are able to perform your tasks without having to be on your feet for long periods, having to lift heavy objects, having to be in a crouching and/or uncomfortable position?

1	2	3	4	5
---	---	---	---	---

5. you are able to assume full responsibility for all you do?

1	2	3	4	5
---	---	---	---	---

6. you can perform your tasks without the nature of your work and your actions endangering other people's safety/lives and/or having a negative effect on the nature/quality of their lives?

1	2	3	4	5
---	---	---	---	---

7. your salary is market-related, in other words it compares well with what persons with similar qualifications and experience earn?

1	2	3	4	5
---	---	---	---	---

8. you are able to function independently?

1	2	3	4	5
---	---	---	---	---

9. your necessary job equipment (for example stationary, tools, electronic and laboratory equipment) is always available?

1	2	3	4	5
---	---	---	---	---

10. you are exposed to the necessary training courses?

1	2	3	4	5
---	---	---	---	---

11. all your good qualities are used?

1	2	3	4	5
---	---	---	---	---

12. you are satisfied with your promotion?

1	2	3	4	5
---	---	---	---	---

13. your fringe benefits (for example housing subsidy) ensure your support and security?

1	2	3	4	5
---	---	---	---	---

14. you have status (to feel important)?

1	2	3	4	5
---	---	---	---	---

15. you are able to get along with your supervisor?

1	2	3	4	5
---	---	---	---	---

16. the personnel regulations (for example regarding working clothes and working hours) satisfy your needs?

1	2	3	4	5
---	---	---	---	---

17. you can perform your tasks without endangering your own safety as a result of the nature of your work and the actions required from you?

1	2	3	4	5
---	---	---	---	---

18. you are included in decision making that concerns you?

1	2	3	4	5
---	---	---	---	---



19. you can perform your tasks without coming into conflict with other people or straining your relations with other people as a result of the nature of your work?

1	2	3	4	5
---	---	---	---	---

20. the instructions that you receive are in keeping with previous instructions (in other words that you do not receive contradictory instructions)?

1	2	3	4	5
---	---	---	---	---

21. you can trust your supervisor in all circumstances?

1	2	3	4	5
---	---	---	---	---

22. facilities (such as toilets and kitchens) meet your needs?

1	2	3	4	5
---	---	---	---	---

23. you have sufficient job equipment at your disposal?

1	2	3	4	5
---	---	---	---	---

24. physical working conditions (for example lighting and temperature) are satisfactory?

1	2	3	4	5
---	---	---	---	---

25. your fringe benefits (for example housing subsidy) supplement your salary adequately?

1	2	3	4	5
---	---	---	---	---

26. your abilities and skills are developed and extended?

1	2	3	4	5
---	---	---	---	---

27. you have sufficient knowledge and information available to do your work?

1	2	3	4	5
---	---	---	---	---

28. your tasks can be performed without demanding your continued and intense concentration?

1	2	3	4	5
---	---	---	---	---

29. the nature of the furniture and decorations in your working area creates a pleasant working environment?

1	2	3	4	5
---	---	---	---	---

30. you have good relations with your colleagues?

1	2	3	4	5
---	---	---	---	---

31. your colleagues consider you successful and/or hard-working?

1	2	3	4	5
---	---	---	---	---



32. your salary is adequate to motivate your to work hard at all times?

1	2	3	4	5
---	---	---	---	---

33. you are making progress?

1	2	3	4	5
---	---	---	---	---

34. your job equipment (for example computer, stationary and tools) is in working order?

1	2	3	4	5
---	---	---	---	---

35. personnel regulations (for example those regarding transfers and working hours) contribute to your satisfaction?

1	2	3	4	5
---	---	---	---	---

36. your input is adequately remunerated?

1	2	3	4	5
---	---	---	---	---

37. your physical working conditions (for example lighting and office space) are adequate for the type of work that you do?

1	2	3	4	5
---	---	---	---	---

38. you are happy with the nature of your fringe benefits (for example housing, pension, medical aid)?

1	2	3	4	5
---	---	---	---	---

39. you are able to perform your duties without time playing too big a role?

1	2	3	4	5
---	---	---	---	---

40. the way in which things are organized contributes to your good achievement?

1	2	3	4	5
---	---	---	---	---

41. management believes its employees to be hard working and/or reliable?

1	2	3	4	5
---	---	---	---	---

42. you have enough work to keep busy?

1	2	3	4	5
---	---	---	---	---

43. the requirements of your job correspond with what you have to offer?

1	2	3	4	5
---	---	---	---	---

44. the social demands made on you are of such a nature that you can easily satisfy them (maintain good relations with others)?

1	2	3	4	5
---	---	---	---	---



45. your good achievements are noticed?

1	2	3	4	5
---	---	---	---	---

46. you are able to display initiative

1	2	3	4	5
---	---	---	---	---

47. you are able to be involved in different tasks?

1	2	3	4	5
---	---	---	---	---

48. you post are essential and will be retained?

1	2	3	4	5
---	---	---	---	---

49. you find regulations regarding staff matters (for example working hours, working clothes) satisfactory?

1	2	3	4	5
---	---	---	---	---

50. you are able to maintain good relations with your supervisor(s)?

1	2	3	4	5
---	---	---	---	---

51. your potential is used to the full?

1	2	3	4	5
---	---	---	---	---

52. you are able to talk to your supervisor whenever you want to?

1	2	3	4	5
---	---	---	---	---

53. you are able to maintain good social relationships with everybody?

1	2	3	4	5
---	---	---	---	---

THANK YOU FOR YOUR PARTICIPATION