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A MODEL AS A FRAMEWORK OF REFERENCE TO FACILITATE THE TEACHING OF CARING TO FIRST-YEAR DIAGNOSTIC RADIOGRAPHY STUDENTS

By

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DEDICATION

I dedicate this thesis to my late grandmother, who always believed in me and showered me with endless love, compassion and kindness. Her selfless nature spoke volumes. I will always love you Ma.

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ABSTRACT

Within the context of South Africa, student diagnostic radiographers start their work-integrated learning from their first year of study. Hence, it is imperative for them to be caring professionals. Generally, diagnostic radiography students begin the radiography programme being passionate and enthusiastic about caring, but they find themselves in environments that do not fully support the development of caring professionals. Diagnostic radiography has always been perceived as a very scientific, technology-driven profession hence the focus of the current undergraduate curriculum is on the technical aspects of equipment and patient positioning. While patient care is definitely an aspect that is emphasised in radiography education, the teaching of caring has been overlooked.   Therefore, the purpose of this study was to explore and describe the concept of caring among first-year diagnostic radiography students, in order to develop a model to facilitate the teaching of caring.

A qualitative, theory-generating, exploratory and descriptive research design was used. Four steps were conducted for model development as a research method. Step 1 was the concept analysis consisting of two phases. Step 1, phase 1 was focus group interviews with first-year student diagnostic radiographers, exploring their understanding of caring. Appreciative inquiry was used as an interview technique. Focus group interviews were conducted until data saturation was achieved. Three major themes emerged from the data: caring as an integral part of a career choice, unpreparedness for interpersonal interactions and barriers and enablers to the development of a caring identity. Results from the focus group interviews in phase one of this research study revealed that radiography students describe caring as being integral to choosing radiography as a career. Despite this, they feel unprepared for their daily interactions with patients. Additionally, they articulated that the radiography environment does not fully support the development of a caring identity. Inductive reasoning was used to identify a central concept, namely the facilitation of a culture of caring.

In step 1, phase 2, the related concepts were defined according to dictionary and literature sources. Step 2 entailed the description of relationships between the identified concepts. Step 3 was the development and description of the model. This

model provides a simple, practical guide to teaching caring to students in a meaningful way that will allow them to develop a culture of caring that will be part of them as individuals. The implementation of the model will be conducted in three phases, namely relationship, working and termination phase. Lastly, step 4 was the description of guidelines for the implementation of the model. These guidelines were illustrated in the form of a workbook. The operationalisation of this model will be in the form of coursework that can be incorporated into relevant subject modules, starting at first-year level.

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CHAPTER 1

RATIONALE FOR AND OVERVIEW OF THE RESEARCH

"Do not go where the path may lead,

Go instead where there is no path and leave a trail"

Ralph Waldo Emerson

In this chapter, the context in which this study was undertaken is described, together with the research problem and the paradigm which guided the research method and design.

1.1   INTRODUCTION

Radiography is a healthcare profession that applies the science of radiation to produce images of the body (Learn.org 2017). Radiography in South Africa has four major disciplines, namely diagnostic radiography, nuclear medicine, radiation therapy and ultrasonography. Diagnostic radiography is a medical imaging discipline that produces X-ray images of the body to assist in the accurate diagnosis of the patient (Reeves & Decker 2012; Moller 2016). The role of a radiographer is to perform radiographic procedures that are requested by medical professionals in order to assist in the process of making a diagnosis. An essential service is a profession that, if disrupted for whatever reason, may cause harm or damage to the health and safety of a patient (South African Government 2018). According to the Labour Relations Act of 1995, emergency medical health services and medical and paramedic services are considered essential services (Department of Labour South Africa 1997). Diagnostic radiography is one of those medical services that plays a pivotal role in emergency medicine as it offers imaging services for trauma and medical emergency patients.

Diagnostic radiographers are expected to complete one year of community service post qualification; thereafter they can seek employment either in the public or private health sectors. Depending on the department, the number of patients that visit an X-ray department can range anything from 100 to more than 200 a day. Diagnostic radiographers are expected to work shifts in order to provide a 24-hour service to

patients. Radiographers play an important role in providing imaging for early diagnosis as well as real-time imaging for specialised procedures.

In order to be employed and practising radiography in South Africa, all radiographers must be registered with the official council, the Health Professionals Council of South Africa (HPCSA) (Health Professions Act 56 of 1974). This is a mandatory requirement and is a process of ensuring that patients receive healthcare services from a properly qualified professional. Healthcare professionals are obligated to abide by ethics and medico-legal regulations by the Council as well as to regularly update and maintain their professional knowledge. Student radiographers are also required to be registered with the Council since they start their clinical rotations for work-integrated learning (WIL) or work-based learning (WBL) from their first year of study. This means that student radiographers are in contact with patients on a daily basis and perform X-ray examinations through the supervision and guidance of a qualified radiographer.

Within diagnostic radiography there are a number of different modalities, from general radiography to more advance modalities such as mammography, interventional studies, magnetic resonance imaging (MRI), computed tomography (CT) and trauma radiography. Therefore, it is considered one of the first-line investigations for many patients that visit a hospital. When a patient visits an X-ray department, they usually present with anxiety and fear and this could be due to the fear of not knowing what to expect from the radiology procedure as well as the anxiety of their diagnosis (Carlsson & Carlsson 2013:3226; Björkman, Enskär & Nilsson 2016:71). Whether scared, anxious or injured, whatever the reason may be, patients need healthcare professionals to be caring towards them (Rising, Hudgins, Reigle, Hollander & Carr 2016:536). In order to alleviate these feelings and provide an effective, efficient service to the patient, it is imperative that a radiographer be considerate and caring towards the needs of the patient (Bolderston, Lewis & Chai 2010:198; Munn, Jordan, Pearson, Murphy & Pilkington 2014:246).

Lown, Muncer and Chadwick (2015:1005) affirm that caring for patients is a part of the ethical codes across many healthcare professions and results in many benefits to the patient. Demonstrating caring behaviours towards patients can result in positive recovery and can assist patients in overcoming certain fears (Carrington College

2013). Therefore, caring for patients within a radiology environment is equally important.

There is increasing literature which supports that caring, empathy and compassion are all concepts that can be taught (Richardson, Percy & Hughes 2015; Costello & Haggart, n.d, Shea et al 2016). Psychology researchers have demonstrated that compassion can be taught to adults and results in increased altruistic behaviour (Cherry 2019, Rowe 2013). In this particular study compassion meditation was used as a tool to learn compassion (Cherry 2019, Rowe 2013). Studies on teaching caring within the nursing curriculum date back to the 1990's (Beck 2001; Dillion & Stines 1996). Blum, Hickman, Parcells and Locsin (2010:41) articulated that teaching caring to nursing students is an essential part of nursing education. Simulation based teaching was identified by these authors as a method that could enhance a student's caring ability (Blum et al 2010:42). Based on these studies it is evident that caring is a concept that can be taught to and learned by students.

According to Bleiker, Knapp, Hopkins and Johnston (2016:1), caring for patients is a very relevant topic and is very applicable to medical imaging. Due to the constant, daily interaction with patients, it is essential for qualified and student diagnostic radiographers to be caring professionals. However, are diagnostic radiography students, at first-year level, properly equipped with the caring skills necessary for daily interaction with patients? What does caring actually mean to a first-year student entering the diagnostic radiography programme? These questions were my driving force for conducting this study and as a diagnostic radiography lecturer, they made me reflect on and think about what is actually being taught to diagnostic radiography students to assist them with the development of the necessary caring skills.

The South African Qualifications Authority (SAQA) is a legal board appointed by the Minister of Higher Education and Training to oversee matters related to the National Qualifications Framework Act. One of the roles of SAQA is to develop and implement policies and criteria for the registration of qualifications (SAQA 2014). The South African Qualifications Authority has developed exit-level outcomes for Diagnostic Radiography, which must be followed by all higher education institutions offering the

programme. One of the exit-level outcomes for Diagnostic Radiography is to "describe the foundational, practical and reflexive competencies, which together constitute the applied competence required of Diagnostic Radiography service at this level" (SAQA 2018). However, the way in which these outcomes are achieved is at the discretion of the higher education institution.

The other exit-level outcomes for Diagnostic Radiography are as follows (SAQA 2018):

1. Perform routine and specialised radiographic procedures to produce images of diagnostic quality.
2. Access, organise and present information applicable to the radiography context in order to record, retrieve and communicate patient data.
3. Evaluate the quality of routine and specialised radiographic images and perform image interpretation to identify normal and abnormal appearances.
4. Plan, develop and apply total quality management appropriate to the diagnostic radiography context.
5. Perform safe and effective patient care in accordance with the patient's needs and departmental protocol to provide a quality service and to maintain the welfare of the patient.
6. Apply the principles of human rights, ethics and relevant medical law which ensure the well-being of the patient.
7. Apply the principles, specific knowledge, skills and values related to one of the chosen electives as listed.
8. Conduct research.

It is important to note that while various significant aspects of the profession are clearly highlighted, including patient care, the concept of developing caring professionals is not mentioned as an exit-level outcome.

Diagnostic Radiography in South Africa was previously offered as a three-year national diploma, but recently this has changed. In most universities and universities of technology in South Africa, the three-year Diagnostic Radiography diploma programme has been replaced by a four-year degree programme (University of Johannesburg 2017; Durban University of Technology 2017; Cape Peninsula University of Technology 2017; Central University of Technology 2017). I compared

and reviewed the subjects from both programmes (diploma and degree) at the higher education institution where the research study was conducted, in order to get a clearer understanding of what was taught overall and what is currently being taught in terms of caring.

In the national diploma curriculum and the new degree programme, most subjects are inclined to diagnostic practices, physics, anatomy, physiology and technology. However, a subject called Psychodynamics of Patient Management is included in the diploma programme. The contents of this subject are basic safety in the X-ray department; immobilisation and transfer technique; infection, hygiene and sterilisation; practical patient care procedures; drugs and contrast media used in the X-ray department, patient care during special procedures; the emergency situation; human rights, ethics and professionalism; communication skills and first aid (Hazell & Casmod 2016:13). The new degree programme has a subject called Professional Practice. The contents covered in this subject are similar to the Psychodynamics in Patient Management module with the addition of academic literacy, introduction to the professional environment, basic communication skills, and cultural and social diversity (Casmod, Lawrence & Hazell 2016:17).

There is no doubt that the skills and knowledge taught in these two modules are necessary for students to be competent diagnostic radiographers, but there is an evident gap regarding the development of caring professionals. Patient care is definitely a concept that is taught to diagnostic radiography students. It is regarded as a critical factor within the healthcare profession (Bolderston et al. 2010:198). Consequently, during the academic education of most healthcare professions, emphasis is placed on patient care. However, according to Paulson (2004:359), there is a difference between patient care and caring. The author further adds that patient care is regarded as a professional responsibility, whereas caring for a patient deals with qualities that are more inclined to human nature and are associated with feelings and emotions. Bolderston et al. (2010:199) describe caring as a feeling expressed by altruistic caring towards another individual. Recognising the difference between the two concepts of patient care and caring is vital to our understanding of caring because many individuals are unable to distinguish between the two.

Even though the content taught in the Professional Practice module is necessary for students to be good healthcare professionals, there has been a failure to develop appropriate content in the current curriculum to teach caring successfully. However, according to literature, there is an indisputable expectation that all diagnostic radiographers must be caring professionals (Bleiker et al. 2016:1). In addition to this, there is no evidence of any assessment method to adequately assess the way in which students interact with patients. The current assessment focuses on the technical competency of the student to perform radiological examinations.

Due to the technical nature of diagnostic radiography, the current curriculum is also a clear indication that the practical and technological aspects of the profession have been given preference. The human element and the "softer skills" such as caring are necessary and must be learned by student diagnostic radiographers for them to be adequately prepared for their interactions with patients. However, in order to teach caring to diagnostic radiography students, an understanding of what caring actually means is needed.

The concept of caring is not new to the healthcare profession and it dates back to the earlier times of Florence Nightingale. Despite this, there is still no consensus on an exact definition and it continues to be an abstract concept (Ousey & Johnson 2006:152; Brilowski & Wendler 2005:641). Many philosophers believe that caring is a virtue of being a human and it affects the way in which we think, feel and act (Flynn 2016:29; Bolderston et al. 2010:199). Caring is further described as having ontological components of being and begins as a value or manner that develops into an intention, which then manifests into a tangible act (Ranheim, Kärner & Berterö 2012:79). Attributes of caring include acts or displays of kindness, empathy, sincere concern and understanding (Paulson 2004:359; Flynn 2016:29).

While care and caring had previously been explained as feminine humanistic qualities which were associated with attributes of a motherly nature, over time the notion of caring has changed and transformed, giving rise to many different theories and models (Ranheim et al. 2012:79). A model of care is anticipated to improve the delivery of healthcare practices and focuses on caring (Agency for Clinical Innovation 2013:3). However, Dingman (2015) asserts that a caring model should not be seen as a "quick

fix" or "stand alone" solution to all problems. Rather, delivery of caring requires a collaboration of commitment and support from all caregivers (Dingman 2015).

Although most caring theories have similar elements, there are some aspects of each philosophers' beliefs that stand out. Roach (Boykin & Schoenhofer 2013:2) explains that caring is the "human mode of being". She believes that we all have the ability to be caring. Roach also suggests that while caring is a part of human nature, our demonstration of caring differs from our lived experiences of being a human (Boykin & Schoenhofer 2013:2). Therefore, our demonstration of caring can be influenced by numerous factors such as physiological, psychological, spiritual and social needs (Flynn 2016:29; Loke, Lee, Lee & Noor 2015:421). Regardless of this, Roach still believes that we can bring forth this capability of caring through respect and concern for the other person (Boykin & Schoenhofer 2013:2).

Another well-known theorist, Jean Watson, developed the theory of human caring which is well recognised and eminent in the nursing profession. Watson acknowledges the person as a whole, in three dimensions: the mind, body and spirit (Boykin & Schoenhofer 2013:4). Based on Watson's theory, it is critical to view the person in a holistic manner when trying to explain an abstract concept such as caring, as the person may be affected by their external environment as well as their internal environment (Burnell & Agan 2013:180).

Mayeroff's earliest work (Mayeroff 1971:1) on caring dates back to the 1970s and has a slightly different approach to caring. He emphasises that caring is not "an isolated feeling or momentary relationship". Similarly, Boykin and Schoenhofer (2013:1) allude to the principle that caring is a process that occurs moment to moment. Grounded on this notion, even though an individual may at times display acts of a non-caring nature, philosophers believe that they are still considered caring by virtue of their humanity. People are encouraged to question their actions beforehand in order to determine if these actions are of a caring nature or not (Boykin & Schoenhofer 2013:2).

Additionally, Mayeroff (1971:9) highlights the importance of our moral obligation and commitment to making caring a way of being. This is in keeping with other researchers' notions that caring has a meaningful aspect which is moulded by significant

relationships and initiates from the philosophy of love, accountability and sacrifice (Ranheim et al. 2012:79; Flynn 2016:34). It is believed that sharing a common philosophy brings about mutual trust between the patient and the caregiver.

Nursing education, over the past few years, has given closer attention to including caring in their curriculum. All these models view caring from different perspectives. In Taiwan, nursing educator Lee-Hsieh (2003:28), developed an educational strategy to teach caring to nursing students. Lee-Hsieh (2003:28) curriculum was based on a dynamic caring model which included students undertaking volunteer work as part of learning caring for others. Her classroom sessions also included reflective practice, peer teaching, group discussions and role-modelling. This strategy provided evidence that student experiences of caring can be enhanced (Lee-Hsieh 2003:32). In China, researchers Guo et al (2013) created a caring teaching model based on the Chinese context. This model was founded on two principles of creating an esthetic situation and an experiential situation. Teaching strategies utilised were; situated learning, narrative, simulation, care journaling and role modelling (Guo et al 2013:913). In addition to these, numerous other models exist namely, Shenton's model which focusses on "interpersonal caring processes, caring consciousness, caring mutuality and caring exchanges", Conway's model which brings in the Christian cultural perspective while Dragich took on a feminist perspective on caring (Guo et al 2013:913).

There are a number of studies on caring in medicine and nursing (Flynn 2016; Gillin, Taylor & Walker 2017; Harris 2018), but there is limited information on this aspect in radiography. Although certain factors of caring from both professions are similar to diagnostic radiography, there are a few characteristics of radiography that must be taken into consideration. The two major factors to be considered which significantly impacts the level of caring within diagnostic radiography is time and technology. These two factors will be further discussed below. Diagnostic radiography is a profession driven by technology and limited patient interaction time. These factors are challenging and are areas of concern that should be addressed for diagnostic radiographers to be adequately prepared to be caring professionals.

Firstly, the amount of time the radiographer spends with a patient has to be considered. In diagnostic radiography, the patient spends a limited amount of time with the radiographer as opposed to ward nurses and doctors (Björkman et al. 2016:71). Yet, within this limited time, the radiographer is still required to be a caring professional. A quantitative study was conducted in Sweden on the caring perceptions of children and parents during the peri-radiographic process. Five radiology venues were included in this study. This study revealed that while radiographers were considered kind and caring, both the parents and children felt that there was insufficient time to interact with the radiographer to ask questions (Björkman et al. 2016:73). According to Bolderston (2016:359), in order to be truly patient-centred, healthcare professionals cannot compromise on patient interaction and allowing the patient time to ask questions. With limited time for interaction, communication is vital in ensuring the patients' full co-operation and understanding of the procedure (Björkman et al. 2016:71).

A research study focussing on patient-centred caring, utilized an ethnographic methodology to gain valuable information about two general radiography environments in the UK (Hayre, Blackman & Eyden 2016:246). In contrast to the study in Sweden, whereby patients wanted more time to interact with the radiographer, this study from the UK reported that some patients valued speed of examinations and reduced waiting times over patient-centred care (Hayre, Blackman & Eyden 2016:246). However, it is important to take into consideration that a patient's perception of waiting time may depend on their overall hospital or clinic visit. This perception of time could include waiting for administration tasks such as opening a file and uploading personal information, waiting to consult a doctor and only then being referred to the radiology department.

Although patients favour shorter waiting times, studies have also documented that most patients prefer longer consultation times (Ahmad, Khairatul & Farnaza 2017:14). This leaves healthcare professionals in a tough predicament. By the time the patient does see the radiographer they might have feelings of frustration, anxiety and tiredness due to the processes followed. The expectations of the patient and the need for a speedy service add to the workload pressures faced by diagnostic radiographers. Moreover, this has left diagnostic radiographers with the dilemma of patient

satisfaction versus patient throughput. Literature shows that in order to overcome this challenge, some diagnostic radiographers have started to develop a robotic mentality of pushing throughput and in the process, they are slowly losing touch with the human aspect of caring (Hayre et al. 2016:245).

Workplace culture was explored using an ethnographic methodology in one diagnostic imaging department over a period of four months (Strudwick 2016:51). This study revealed that diagnostic radiographers have to make quick decisions about patients due to limited time for interaction, which has subsequently led to radiographers labelling patients according to body parts or examinations being performed (Strudwick 2016:51). This is concerning as poor judgement, due to limited time and quick decision-making, may lead to poor communication and ultimately poor caring for patients (Strudwick 2016:54). Therefore, limited time spent with the patient is a crucial factor for caring and is a distinctive characteristic of diagnostic radiography, which should not be disregarded.

Secondly, diagnostic radiography is one of the healthcare professions which in recent years has excelled in technological advancements (Moller 2016:309). Studies conducted in the UK illustrate the impact of technology on caring (Hayre et al. 2016:248). Radiographers are now capable of taking better quality X-rays in a shorter time with lower radiation doses to the patient (Hayre et al. 2016:248). While these benefits are acknowledged, it may lead to diagnostic radiographers now spend even less time with the patient, making it even more difficult for the radiographer to interact with the patient (Hayre et al. 2016:245). Sociologists believe that technology denies the patient their awareness of self and permits professionals to objectify patients (Reeves & Decker 2012:82).

Ideally radiographers should try to ensure that patients feel like humans and they should not simply be objectified by the part being imaged (Bolderston 2016:358). A radiographer's main role might be to produce a good quality radiograph using advanced technology, but they should not lose sight of the patient (Bolderston 2016:358). Reeves and Decker (2012:82) used oral history as a research method to explore diagnostic radiographer's use of distancing as a method for emotional management in radiography practice. This study reports that diagnostic radiographers

felt that their long-term goal was the image being produced and caring for the patient was perceived as a short-term goal in order to achieve the x-ray. McMaster and Degiobbi (2016:298), who are radiation therapists, advised that it is imperative for radiographers to remember that although advanced technology has many advantages, the patient is not aware of these advantages. These authors further emphasise that the small gestures of a smile, warm blanket or a simple touch make a difference to the patient (McMaster & Degiobbi 2016:298).

Advancement in technology has led to numerous medical benefits for example, the use of technology for assisting elderly patients with daily tasks such as testing blood sugar levels and reminding them to take medication on time, without the need for someone to physically be present (Pols & Moser 2009:160; Mistry, Keepanasseril, Wilczynski, Nieuwlaat, Ravall, Haynes and the patient adherence review team 2015). In contrast, in diagnostic radiography, the technology advancements are intended to enable the radiographer to perform optimal imaging of the body and are not intended to replace the radiographer. These technologies are exceptionally useful with growing patient numbers, but ultimately they cannot give the aspect of human love and caring (Pols & Moser 2009:160; Mistry et al 2015). A diagnostic radiographer must still interact with the patient and demonstrate the necessary caring skills. The impact of technology on caring is an ongoing debate, as there is a constant fear that technology is distancing healthcare professionals from their patients (Hayre et al. 2016:248).

The above factors make caring for a patient in a diagnostic radiography context different from other healthcare profession contexts. Because of technology and shorter patient interaction time, the expectations of the patients in a diagnostic radiography environment are also different. It is therefore challenging to simply adopt a caring model directly from another profession; hence the need to develop a model within the context of diagnostic radiography. The gap in literature is that there is currently no model to facilitate the teaching of caring to diagnostic radiography students.

1.2   CONTEXT AND RATIONALE

"Nobody cares how much you know,
Until, they know how much you care."
Theodore Roosevelt

General diagnostic radiography procedures, such as skeletal x-rays, comprise about 90% of most examinations that are carried out in the clinical environment (Hayre et al. 2016:245). Caring is a fundamental aspect of diagnostic radiography (Beyer & Diedericks 2010:22) and even though a patient may spend anything from 10 to 30 minutes with the radiographer, the radiographer must still be a caring professional. Studies conducted in the UK provide evidence that diagnostic radiographers are becoming disillusioned with caring due to workload pressures and are focusing on patient throughput (Hayre et al. 2016:248). The greatest fear is that radiographers are becoming driven by these workload pressures and are perceived as robots in a factory, pushing through the production line and adopting the "in and out" culture (Hayre et al. 2016:248).

In the radiography profession as a whole, immense attention over the years has been given to technology progression and advancing image quality. Consequently, the priority of science technology has surpassed the importance of the human element (Moller 2016:309). The potential negative of this one-sided advancement is that diagnostic radiographers are now finding themselves spending even less time with the patient. This is concerning as technology is potentially creating a distance between the patient and the radiographer (Hayre et al. 2016:248).

While the importance of caring within the context of diagnostic radiography is acknowledged, the current radiography curriculum does not have content to teach students the necessary skills required to be caring professionals. Within diagnostic radiography education, the practical, scientific components of the profession have been given preference. The concern here is that if we continue to teach radiography education in the same way, namely focusing on patient care and not developing caring professionals, there is the potential that the future radiographer may end up being disconnected from the patient.

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The Francis inquiry was an inquiry into the failures of care at the Mid-Staffordshire NHS trust in the UK (Bleiker et al. 2016:257). The report indicates that there is a need for increased training and education on caring (Bleiker et al. 2016:257). The report focused on nursing and medicine, but the Society of Radiographers (SoR) suggested that the report's recommendations be implemented by a wider body of healthcare professionals (Bleiker et al. 2016:257). This is a clear validation of research exploring the teaching of the concept of caring within a radiography context.

Theorists accept that by virtue of being a human, we are all caring (Boykin & Schoenhofer 2013:1). Therefore, students entering the diagnostic radiography profession have a basic understanding of caring that is associated with "common sense" and human nature. This "common sense" aspect of caring develops over the years of childhood and can be founded on upbringing, spirituality and various beliefs (Clouder 2005:505). However, the question here is whether this basic understanding of caring is adequate for students who are becoming healthcare professionals.

Students chose the healthcare profession because they have the idea of wanting to help and care for others (Ehrlich & Coakes 2017:63. They begin the training programme being caring and empathetic however these attributes decrease over time (Nunes, Williams, Sa & Stevenson, 2011:16; Williams, Boyle & Howard 2015:60; Loke et al. 2015:42). Dating back to more than ten years ago, literature illustrated that a lack of training on or teaching of caring can lead to students being demoralised by the reality of a clinical situation (Clouder 2005:506). As a result, this could make a student question their understanding of caring and at times even their choice of profession. It is therefore important for educators to properly prepare and support students for these daily interactions.

Research on caring is increasing, as there is an unmistakeable need for all healthcare professionals to be caring (Bleiker, Knapp, Hopkins & Johnston 2016:1; Bolderston, Lewis & Chai 2010:198; Munn, Jordan, Pearson, Murphy & Pilkington 2014:246). However, literature also clearly demonstrates that there is a missing link in our teaching, which has resulted in the development of professionals who demonstrate attributes of a non-caring nature. This provides sound justification for reviewing the

current undergraduate curriculum to ensure that students are given the skills necessary for caring for patients.

Caring is a relatively new concept in diagnostic radiography and research on the teaching of caring still needs to be explored. The reason for this could be that many individuals view caring and patient care as synonymous. Currently, the South African radiography profession lacks literature on the concept of caring and there are no models available to assist in the facilitation of teaching caring to diagnostic radiography students. By developing such a model for the purpose of teaching caring, it is anticipated that student radiographers will be better prepared for their patient interactions during their WIL.

1.3   PROBLEM STATEMENT

The problem is that there is an apparent lack of caring among many diagnostic radiographers and other healthcare professionals. Based on my own personal observations during my time as a clinical diagnostic radiographer, as well as during recent clinical visits for student observations and assessments, the lack of caring among radiographers continues to be a problem. Additionally, in support of my observations, a recent publication from the HPCSA (2017) indicated that the Council had been inundated with complaints from patients due to the lack of empathy demonstrated by healthcare professionals as a whole.

The possible underlying problem could be the current undergraduate curriculum's focus on patient care and not on caring. Medicine and healthcare are understood to be scientific, evidence-based professions and the current teaching paradigms emphasise the technical aspects of the profession. Therefore, when a student graduates they can undertake patient care but the ability for caring has not been developed.

Student radiographers generally enter the programme having a higher level of caring and empathy (Nunes et al 2011:16; Williams, Boyle & Howard 2015:60; Loke et al. 2015:421). The fear here is that if diagnostic radiography students continue to train in environments that do not promote the development of caring, they could be easily influenced by the behaviours of the qualified radiographers. This apprehension is

backed by international studies which have shown that a student's level of caring decreases over time, from first to final year (Nunes, Williams, Sa & Stevenson, 2011:16; Williams, Boyle & Howard 2015:60; Loke et al. 2015:421).

Since caring is considered to be an innate characteristic of being human, it is assumed that all first-year diagnostic radiography students understand the meaning of caring. However, as literature has illustrated, individuals' understanding of caring may differ. As it stands, there are currently no studies available in a South African context that explore the understanding of caring from a first-year diagnostic radiography student's perspective. Therefore, it is necessary to gain insight into the meaning of caring among first-year diagnostic radiography students to be able to bridge the gap between the basic understanding of caring and the knowledge necessary for the development of a caring professional. This study was aimed at developing caring attributes in student diagnostic radiographers from the very beginning of their academic learning by providing them with support and empowerment, to become caring professionals. It is anticipated that when a student graduates, they will have the qualities of a caring professional developed in them and they would have created their own caring identity.

The model developed in this study will serve as a framework of reference for diagnostic radiographer educators, to assist them in facilitating the teaching of caring to diagnostic radiography students. Additionally, this model is specific to diagnostic radiography and will add to the body of knowledge that is currently lacking in South Africa. The research questions that guided this study were:

- What does caring mean to a first-year diagnostic radiography student?
- What can be done to facilitate the teaching of caring to diagnostic radiography students?

1.4   AIM AND OBJECTIVES

The aim of this study was to gain an understanding of caring among first-year diagnostic radiography students. Based on this understanding, a model was developed and guidelines to implement the model were also formulated.

The objectives of this study were:

1. To explore and describe the understanding of caring among first-year diagnostic radiography students

2. To develop and describe a model to facilitate the teaching of caring to first-year diagnostic radiography students

3. To describe guidelines to implement the model to facilitate the teaching of caring to first-year diagnostic radiography students

1.5   PARADIGMATIC PERSPECTIVE

Research within the radiography profession is very limited and that within a South African context is scarce. Therefore, for this research study, the theory of health promotion in nursing was adopted (University of Johannesburg 2010).

The theoretical assumptions that guide the theory of health promotion in nursing are in keeping with my beliefs and are easily adaptable to the diagnostic radiography profession. The theory of health promotion is illustrated in figure 1.1 below.

THEORY FOR HEALTH PROMOTION IN NURSING
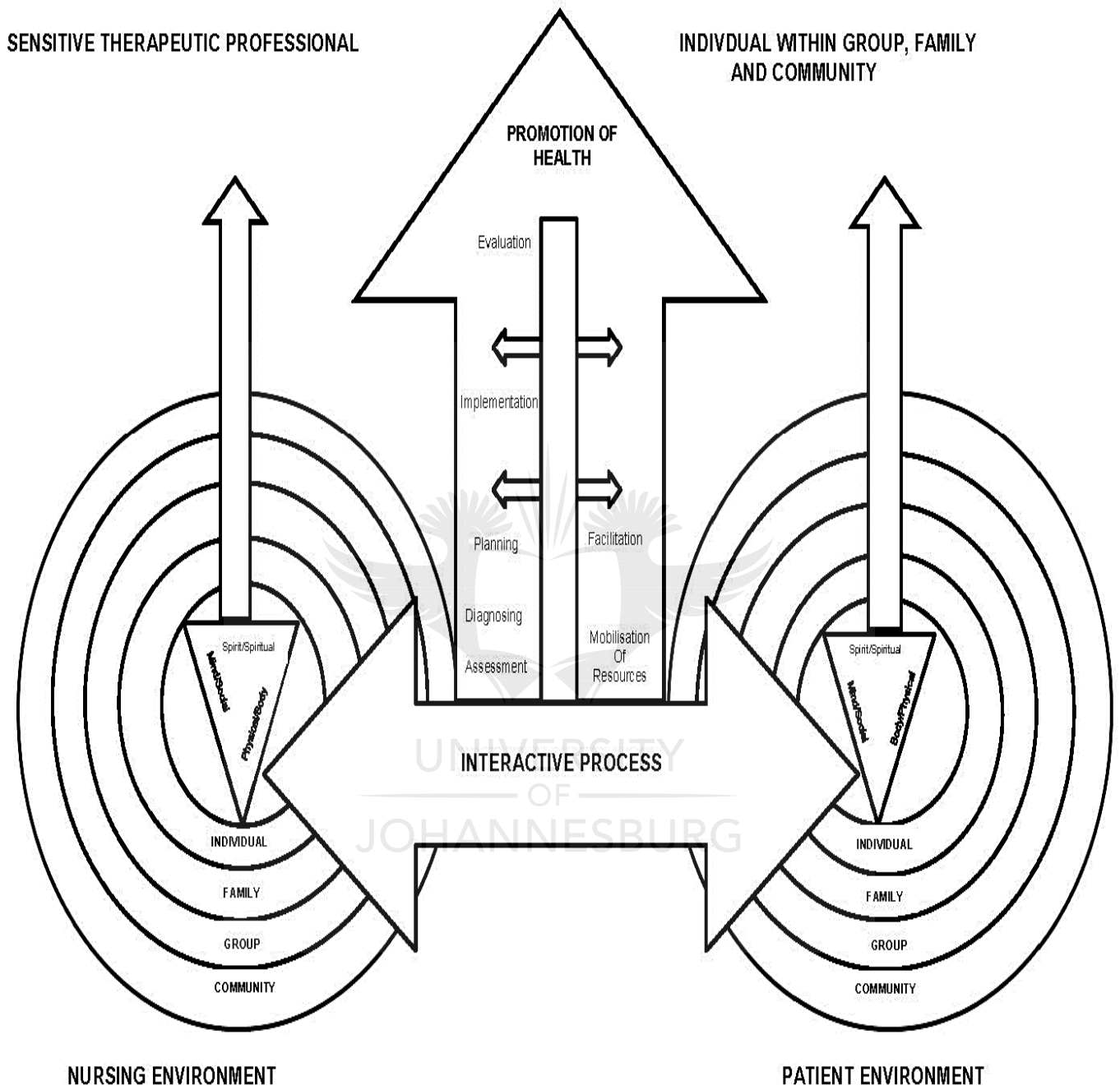
Figure 1.1: Theory of health promotion in nursing (University of Johannesburg 2010)

1.5.1 Metatheoretical assumptions

The theory of health promotion in nursing is guided by metatheoretical assumptions that the person is understood as holistic, having an internal and external environment, and that health is an interactive process that involves the utilisation of resources. The following discussion is aimed at demonstrating how the metatheoretical assumptions that guide this theory are easily adaptable to diagnostic radiography and were implemented in this research study.

1.5.1.1 Person

For the purpose of this study, a person refers to a student diagnostic radiographer who is registered with the HPCSA. All diagnostic radiography students are whole people and therefore they are seen holistically as having physical, mental and spiritual elements. It is for this reason that the person cannot be separated from the environment.

1.5.1.2 Spirit/spirituality

Spirituality is based on an individual's own beliefs and is different for each individual. It brings meaning and purpose to a person's life. The spirit or spirituality will be discussed from a Hindu perspective, as this is the belief structure that guides my metatheoretical assumptions. Hindus believe in one true God that may have many different names. They further believe that God resides in every individual as the eternal spirit or soul called Atman (Saibaba 2015; Sathya Sai International Organisation 1974).

1.5.1.3 Environment

In the theory of health promotion in nursing, a person is understood as having both an internal and external environment (University of Johannesburg 2010:5). Based on this, the diagnostic radiography student is viewed holistically (internally and externally). The internal environment is acknowledged as incorporating the mental, physical and spiritual requirements of the individuals participating in this study. For the purpose of this study, the external environment is the higher education institution, where the diagnostic radiography students were registered, the clinical venues where students conducted their WIL and the colleagues they encountered during their training. These

environments must be in synchronisation with each other in order to have a balanced, whole and caring student.

1.5.1.4   Caring

In keeping with my religious beliefs and in the words of Shri Sathya Sai Baba, "as man is the embodiment of God, it is his primary duty to help the destitute and the forlorn" (Sathya Sai International Organisation 2003). Since my religious teachings describe all people as God, we are taught to always show love, compassion and care towards them. Caring is seen as a universal phenomenon which has been studied since the early 1800s and is considered to be a part of human nature which affects the way we think, feel and act (Flynn 2016:29; Bolderston et al. 2010:199). Caring is described as an act of kindness, compassion and understanding towards another individual (Flynn 2016:29).

1.5.2 Theoretical assumptions

The following theoretical assumptions were formulated from caring literature (Boykin & Schoenhofer 2013; Brilowski & Wendler 2005; Dingman 2015) to conduct the study:

- ❖ All people are caring by virtue of their humanness.
- ❖ Caring is a process and occurs moment to moment.
- ❖ It is important for all students and qualified diagnostic radiographers to be caring professionals.

1.6   DEFINITIONS

The following concepts are important for the reader's understanding of the report:

1.6.1 Diagnostic radiography student

A diagnostic radiography student is a student who is registered at undergraduate level to study diagnostic radiography at a higher education institution. Student diagnostic radiographers interact with patients and are involved with the imaging of these patients under the supervision of a qualified radiographer.

1.6.2 Radiology department

The radiology department is a part of the hospital team who perform a variety of examinations to diagnose and treat patients. A radiology department contains all four disciplines of radiography, namely diagnostic, ultrasound, nuclear medicine and radiotherapy.

1.6.3 Caring

For the purpose of this study, caring is defined as "an altruistic act of concern, compassion and empathy towards another individual without any discrimination. This can be demonstrated by human acknowledgement, genuine interest and respect" (Bolderston et al. 2010:198; Flynn 2016:29). Diagnostic radiographers and students alike are constantly interacting with people (patients and other staff members) and therefore it is necessary for them to be caring.

While patient interactions within the context of diagnostic radiography may be considered to be a brief encounter due to the limited time spent with patients (Bleiker et al. 2016:257), compassionate care can still be achieved by the little gestures of smiling, greeting the patient, providing them with a blanket as well as the "power of touch" (Bleiker et al. 2016:258; Hayreet al. 2016:245). A display of empathy can be reassuring to patients and in theory empathy allows a radiographer to connect with their patients (Bleiker et al. 2016:258).

1.6.4 Facilitation

Facilitation is defined as an act of helping other people achieve a particular task or deal with a process (Cambridge Dictionary 2017). In this study, the researcher's role of facilitation was to ensure a comfortable environment that promoted successful participation by the participants. Participants had the freedom to express themselves and share their understanding of caring.

1.6.5 Model

A model is a symbolic or diagrammatic illustration of a concept or theoretical relationships by means of pictures, symbols, mathematical notations and diagrams (Polit & Beck 2012:128). Similarly, Chinn and Kramer (2011:157) state that a model is "a symbolic representation of empiric experience". A model is a depiction of

relationships between concepts in order to provide meaningful interpretation of phenomena and a depiction of how phenomena relate to each other (Brink, Van der Walt & Van Rensburg 2012:26).

1.6.6. Humanistic

Humanistic is a person's ability to treat another person with respect and ensuring their safety, happiness and well-being. (Cambridge 2019). A humanistic approach emphasises empathy and compassion.

1.6.7. Patient-centred

Patient-centred caring is caring that is driven by the aim of meeting the needs of the patient (Smith & Topham 2016:374). According to Hayre, Blackman and Eyden (2016:245), The Health Foundation, defines patient centred care as "affording people dignity, compassion and respect; offering coordinated care, support or treatment; offering personalised care, support or treatment and supporting people to recognise and develop their own strengths and abilities to enable them to live independent and fulfilling lives."

1.7   METHODOLOGICAL ASSUMPTIONS

A theory-generating research design was deemed appropriate due to the scarcity of research on caring in the radiography profession and the need to increase the body of knowledge within radiography. A qualitative methodology was selected, as the researcher required a detailed exploration and description of the understanding of the concept of caring. To encourage a more optimistic outlook on research in radiography, a positive research approach, appreciative inquiry (AI), was undertaken to understand the concept of caring. A qualitative, theory-generating research design was therefore applied using AI as an interview technique.

Appreciative Inquiry is a method of focusing on the positive in any situation in order to create innovative ideas that bring about more meaningful, deeper and sustainable change (Cooperrider and Associates 2012). It is an approach that is not one-sided but rather looks at the entire system and is revolutionising the way in which change emerges (Cooperrider and Associates 2012). This approach allows for collaboration

and teamwork because it is believed that people control their own destiny by visualising what they want and then they develop methods to achieve it (Hung, Phinney, Chaudhury, Rodney, Tabamo & Bohl 2018:2; Michael 2005).

A theory is a model or framework for observations and understandings. The purpose of theory-generating research is to create a clearly defined set of concepts with the intention of describing and explaining a phenomenon. Concepts are exceedingly abstract and are considered the fundamental components of a theory. Data collected during the AI interviews in this study was used inductively to establish a central concept. Relationship statements were constructed deductively to ascertain relationships between the identified related concepts. Once the relationships were clearly defined, a model was developed to symbolically demonstrate the relationships established.

The research is contextual in nature and is supported by the qualitative philosophy in which reality is grounded on perceptions, acknowledged as being diverse for each individual and changes from moment to moment. Hence, theory is very specific to a certain context. Diagnostic radiography is a specialised discipline; therefore this study was conducted with diagnostic radiography students in order to obtain information-rich data.

Two assumptions guided this study due to the qualitative nature of the research: internal consistency and adequacy. In order to ensure internal consistency, a detailed description of the context of this research is provided. This will allow for easy transferability to another situation or context for larger groups of students where applicable (Lincoln 2011:2).

Adequacy is necessary to ensure that participants can easily relate to the theories developed. The research participants should be able to identify their own voices and ideas. Member checking was done in this study to allow diagnostic radiography students to recognise their own voices in the themes and categories developed. A logical approach was used to develop the model to ensure that the ideas came from the stories that were shared, such that diagnostic radiography students could be a part

of this model and recognise themselves in it. An article was written for publication of the results from the focus group interviews (Naidoo, Lawrence & Stein 2018b).

The last methodological assumption that guided this qualitative research was rigour. Rigour is explained as the quality of the research process. A study is considered to be more trustworthy when a more rigorous research process is conducted (Morse 2008:796). Rigour is described as the way in which the researcher validates integrity and competence (Tobin & Begley, 2004:390). To ensure rigour, this study was conducted using the concept of trustworthiness as referred to by Lincoln and Guba (1985:301-331). Trustworthiness is defined as the degree to which the findings of the study are a true expression of the personal or lived experiences of the explored phenomenon (Curtin & Fossey, 2007:88). Strategies to improve trustworthiness include credibility, transferability, dependability and confirmability. These strategies will be discussed in detail in chapter 2.

1.8   RESEARCH DESIGN AND METHOD

A description of the research design used and the method undertaken is vital for understanding this research report.

1.8.1 Research design

A qualitative, theory-generating, exploratory, descriptive and contextual research design was utilised in this study (Chinn & Kramer 2011:185; Brink et al. 2012:124). Appreciative inquiry was used as an interview technique. The focus was on exploring and understanding the concept of caring among first-year radiography students. Based on this understanding, concepts were identified, relationship statements were constructed and a conceptual framework was developed in order to assist in developing a model for facilitating the teaching of caring within the radiography curriculum (Brink et al. 2012:124).

Postmodernism takes on the view that reality is based on an individual's understanding and viewpoints (Babbie 2011:10). There is no single reality. Postmodern theorists aim to deconstruct texts in order to reveal hidden meanings (Creswell 2007:45). This type of research is contextual and is valid in relation to time and people (Holloway & Galvin 2017:5). This type of paradigm is in keeping with this research study as this study

focused on understanding a phenomenon from the perspective of a group of people within a particular context.

A constructivist paradigm describes reality as being subjective with no one true reality and it is a construct of the human mind. Constructivism is a research paradigm that encompasses the belief that people construct their understanding and awareness of the world through their experiences and reflective practices (Patel 2015). As a researcher, constructivists acknowledge that their own beliefs and theoretical understanding guide the development of the research problem, the research design and the data analysis. The researcher and participants are understood to be a team in the research process because theory and practice cannot be separated. Due to the abstract nature of the concept of caring, I chose a constructivist paradigm for this research study as I believe the experiences of the diagnostic radiography students shape their understanding of the concept of caring.

Based on the flexibility and freedom of postmodernism, I as a researcher was able to use AI as an interview technique to identify a central concept rather than an action research design. This enabled me to be creative and innovative in my exploration of the phenomenon while at the same time upholding the rigor that is required throughout the scientific process. A constructivist approach permitted me to explore the understanding of caring among first-year diagnostic radiography students and to generate a theory to facilitate the teaching of caring, using a subjective approach to construct information-rich data in a specific context.

In this report, I endeavoured to detail my assumptions during the research process and to remain reflective and reflexive throughout as this is in line with the postmodern, constructivist paradigm guiding this research design.

1.8.2 Research method

The model development was conducted in four steps as described by Chinn and Kramer (2011). Step 1, the concept analysis, consisted of two phases. Step 1, phase 1 consisted of focus group interviews with first-year diagnostic radiography students, exploring their understanding of caring. Appreciative Inquiry was used as an interview technique. A central concept was identified from the results of the interviews. Step 1, phase 2 entailed

defining and classifying related concepts. Step 2 consisted of describing the relationships between the identified related concepts. Step 3 entailed the development and description of the model. In step 4 guidelines for the implementation of the model were described.

1.8.2.1 Step 1: Concept analysis

The concept analysis was conducted in two phases as described below.

a) Phase 1: Identifying a central concept

Phase 1 entailed focus group interviews with first-year diagnostic radiography students to explore and describe their understanding of the concept of caring. The population for this phase of the research consisted of first-year diagnostic radiography students registered at a higher education institution in Gauteng. Purposeful sampling was used to select interview participants (Brink et al. 2012:141). The participants also needed to be comfortable sharing their stories with other first-year diagnostic radiography students as well as being comfortable being interviewed in English. This method allowed information-rich participants to be chosen to provide knowledge specific to the research study. Participants were selected and interviewed until data saturation was reached (Brink et al. 2012:141).

Data collection for this phase of the research was through focus group interviews, reflective and reflexive notes taken during and after each interview. Appreciative inquiry was used as an interview technique using the 4D model of Discovery, Dream, Design and Destiny (Michael 2005:223). This 4D model is illustrated in figure 1.2 below.

Figure 1.2: 4D model of appreciative inquiry (Cooperrider and Associates 2012)

Appreciative inquiry as an interview technique was considered appropriate for the research question and context as I intended to explore the understanding of caring among first-year diagnostic radiography students in a positive manner. I believe that their experiences and understandings are socially constructed and open to change. It is for this reason that appreciative inquiry was the most fitting choice for this study. Appreciative inquiry has been utilised successfully in other healthcare settings (Trajkovski, Schmied, Vickers & Jackson 2013; Chauke, Van der Wal & Botha 2015; Hung et al. 2018). The 4D model has been used extensively in AI research and it was used to structure the questions in the focus group interviews of this study. This model

for AI is in keeping with the authenticity of a postmodern constructivist research paradigm. The 4D model allowed me to ask broad, open-ended questions, which gave the participants the freedom to develop their own dreams for the profession without me constructing the questions. Questions in the focus group interviews were posed in an appreciative manner to encourage storytelling that provided narrative-rich communication. The following phases were used: discover, dream, design and destiny.

Firstly, participants were asked to share stories where they **D**iscovered a time or times where they expressed or experienced caring. It also made them focus on a time that caring meant the most to them. The question posed to participants was: "Tell me what caring means to you as a student radiographer."

Secondly, participants were asked to share stories where they were given the opportunity to **D**ream about the ideal caring professional. The question asked was: "Describe how you see yourself in the future as a caring radiographer."

Next, participants were asked to **D**esign and create the qualities and attributes required by them to become this ideal caring professional. The question asked was: "What do you think you will need in order to be a caring radiographer?"

The last phase was the **D**estiny phase where participants were asked to develop innovative ways to achieve the required qualities and attributes of a caring professional. The question asked was: "Tell me creative/innovative ways in which we can achieve this caring."

My role in the focus group interviews was one of facilitation rather than leadership. This gave participants the freedom of discussion to move freely from one question to another. At times, I found participants instinctively finding ways to achieve the required attributes and qualities for caring without being asked the question.

During the focus group interviews, descriptive and reflective field notes were compiled, describing the group dynamics and possible themes that emerged during the interview

(Creswell 2013:251-252). Personal notes were used to document my feelings and experiences during the interview process. This enabled me to bracket my own personal feelings and stories before the data analysis commenced. Bracketing is a method used to reduce the potential of preconception and bias during the research process (Tufford & Newman 2010). In an attempt to improve the interview process from one interview to the other, I had made methodological notes for possible changes, which I could implement. I kept theoretical notes of my initial thoughts of possible themes that could be emerging for later review.

i) The role of the researcher as the main data collection tool

I made a conscious decision to be aware of my actions throughout the research process, as I wanted the data to reflect the stories of the participants and not of my own personal experiences. My role was purely that of a facilitator of the discussions and I set aside my own personal story as I listened to and observed the interviews.

ii) Data analysis

The data was analysed by means of opening coding as described by Holloway and Wheeler (2010:286). Data analysis occurred concurrently with data collection. While collecting data, I reflected and started the analysis process (Brink et al. 2012:194). According to Holloway and Wheeler (2010:282), the process of analysis has different stages:

❖ Transcribing interviews and sorting field notes
❖ Organising, ordering and sorting the data
❖ Repeatedly listening to and reading or viewing the material collected

Coding is a process of assigning labels or names to sections of data (Holloway & Wheeler 2010:286). The data was coded and categories and themes were created based on the interpretation of the meaning of the data. Themes were assigned labels using a descriptive term. The identified concepts formed the basis of the theory (Chinn & Kramer 2011:188).

Once the themes and categories were identified, they were shared with the participants in the form of a presentation. The participants were then asked for their

opinions and feedback regarding the themes. They were also asked if the stories shared were correctly interpreted and they could hear their voices coming through. A positive response was obtained from the participants. Subsequently, a literature review was conducted in order to contextualise the results.

The findings of this study were also written up in the form of an article in a peer-reviewed journal (Naidoo et al. 2018b). The draft article was shared with the participants and once again, they were asked if the true meaning of their stories was written correctly. Participants were given time to read the article and provide feedback. Yet again, a very positive response was achieved.

b) Phase 2: Defining and classifying of central concepts

A conceptual meaning was created by identifying, defining and classifying the central concepts. Concepts were defined through the use of dictionaries and relevant subject literature. Classification of the central concepts was done using the well-known survey list of Dickoff, James and Wiedenbach (1968) which includes the following six questions:

- Who is the agent?
- Who is the recipient?
- What is the context?
- What is the procedure?
- What are the dynamics?
- What is the outcome?

1.8.2.2 Step 2: Relationship statements

The researcher describes how the identified and defined central concepts interrelate with each other (Chinn & Kramer, 2011:19).

1.8.2.3 Step 3: Development and description of a model

A model for this research was described using Chinn and Kramer's descriptive components in the process for theory development. The descriptive components included describing the purpose of the model, identifying the components, defining the concepts and forming relationship statements for the development of a conceptual

framework (Chinn & Kramer, 2011:195). This conceptual framework then formed the basis for the description of the model to facilitate the teaching of caring to diagnostic radiography students. A panel of experts in model development were consulted to evaluate the model. This consisted of professors and doctors who were familiar with and well versed in qualitative theory-generating research methods. Chinn and Kramer's components of theory evaluation (2011:196-205) were used. The following questions were posed:

- ❖ How clear is this model?
- ❖ How simple is this model?
- ❖ How general is this model?
- ❖ How accessible is this model?
- ❖ How important is this model?

Feedback and suggestions were taken into consideration and changes were made accordingly.

1.8.2.4 Step 4: Guidelines to operationalise the model

A description of the model included detailed guidelines for the implementation of the developed model. The process will be described in detail in chapter 5.

1.9   TRUSTWORTHINESS

Guba's model of trustworthiness provides criteria suitable for qualitative studies. These criteria include dependability, credibility, transferability and confirmability (Holloway & Wheeler 2010:243-249; Shenton 2004; Anney 2014). Dependability in qualitative research ensures that a study is accurate and consistent. Dependability in the current study was ensured by triangulating data collection, as well as by providing a detailed description of the research methods. In addition, direct quotes are supplied when presenting findings (Holloway & Wheeler 2010:243-249).

Credibility resembles the concept of internal validity. In this study, prolonged engagement, reflective notes, triangulation, peer review, member checking and in-depth interviews (Holloway & Wheeler 2010:243-249) ensured credibility. Transferability refers to the ability to transfer the findings from one context to another

in a similar situation (Holloway & Wheeler 2010:243-249). Ideally, generalisations are not the aim of qualitative research but the steps taken in this research study allow the reader to consider a case-to-case comparison where necessary. Transferability was ensured by detailed description of the research process to allow easy comparison with another setting or population.

Lastly, Lincoln and Guba (1985) demand confirmability. Confirmability confirms that the findings and conclusions of the study have not been influenced by the researcher's preconceptions. In order to achieve this, I ensured that there was an audit trail detailing the processes leading to the development of the constructs, themes and interpretations (Holloway & Wheeler 2010:243-249). Additionally, I used reflection as a method to reflect on my own character and I made field notes detailing my viewpoints and beliefs during the focus group interviews. Included in this report are my metatheoretical assumptions, which guided the research process. In this way, I was able to clarify researcher bias. These steps will be discussed further in detail in chapter 2.

1.10 ETHICAL CONSIDERATIONS

The ethical principles of respect for autonomy, non-maleficence, beneficence and justice were adhered to throughout the research process (Creswell, 2013:212; Brink, 2003:31).

1.10.1 Informed consent

Informed consent was obtained from each participant (Appendix D) and they were given an explanation of the study. Participants were supplied with the results of the study and findings may also be shared upon future requests. The participants' right to freedom of choice and expression was considered by allowing the participants the right to decide voluntarily whether to participate in the study or not. Each participant received a full description of the study and of what participation in the study involved. They were permitted to withdraw at any time but data collected until the time of withdrawal will be retained by the researcher since no names were used during the focus group interviews. This is in keeping with the principle of **autonomy**.

Individuals are considered to be autonomous, which means that they have the right to self-determination. This gives individuals the right to participate without encountering any prejudice or penalties. The participants in this study were students at the university where I lecture, and therefore they were considered as having diminished autonomy (Brink et al. 2012:35). However, all participants were from the first-year level group and I do not lecture first-year students. In this way, the participants did not feel intimidated. I liaised with the class representative in order to arrange times and dates for interviews that were suitable for the class as a whole. This gave the participants freedom of choice and they were not compelled to participate.

1.10.2 Privacy and confidentiality

Fairness and dignity were applied throughout the study. Individuals were selected fairly and purposefully based on the research problem of the study. The right to fair treatment was based on the principle of **justice** (Burns & Grove, 2011:31-32). The participants' rights to privacy, confidentiality and anonymity were protected by not publishing the names of the participants. In focus group interviews it is impossible to ensure confidentially. However, before the start of the focus group interviews participants were requested to respect each other's privacy by not discussing the interview outside of the bounds of the focus group interview. An information letter (Appendix D) about the study was given to each participant regarding the focus group interview, and permission was requested from the participants to allow all the interviews and discussions to be audio-recorded (Creswell, 2013:212; Brink, 2003:31). The interview transcripts are kept in a locked cupboard and will be destroyed two years after publication of the research. Information shared from the interviews will only be accessible to the researcher, supervisors and transcriber. The transcriber was asked to sign a confidentiality agreement prior to reviewing the audio-recordings (Appendix E).

1.10.3 Beneficence and non-maleficence

There were no direct **benefits** for the participants in this study. However, the focus group interviews were seen as a positive platform for students to share their personal and clinical experiences with each other. Additionally, the information provided assisted in improving the teaching of caring to future students. The principle of **non-**

maleficence is adhered to by avoiding harm to participants (Brink et al. 2012:35-36). There was no form of physical or emotional harm to the participants in this study.

1.10.4 Permission

Ethical permission to conduct the research was granted by the University of Johannesburg's Faculty of Health Sciences Academic Ethics Committee (Appendix A). Permission was also granted by the head of the Medical Imaging and Radiation Sciences (MIRS) Department (Appendix C) as well as the higher academic institution concerned (Appendix C).

1.11   CONCLUSION

Diagnostic radiography is a specialised field in which diagnostic radiographers are in constant contact with patients. Diagnostic radiographers are expected to be caring professionals as well as have a sound knowledge of the technical aspects of the profession. However, literature indicates that there is an apparent lack of caring among many diagnostic radiographers. Despite this, the current curriculum of radiography education, within a South African context, lacks content on teaching caring to student radiographers. Presently, there is no model available to assist with this facilitation of teaching of caring to first-year diagnostic radiography students. It is for this reason that theory-generating research was deemed appropriate. The steps for model developed as described by Chinn and Kramer will be used.

1.12   ORGANISATION OF CHAPTERS

Chapter 1 – Rationale for and overview of the research

This chapter provided an overview of the research problem and the research paradigm which guided the research method and design. Details of the context in which this study was conducted were given.

Chapter 2 – Research design and method

The research design and method used during the research process are described in this chapter. The rationale for the method utilised is explained and a description of the research method which allowed the research questions to be answered is provided.

Chapter 3 - Results of appreciative inquiry interviews with first year diagnostic student radiographers

The findings from the AI interviews conducted during the focus group interviews are presented in this chapter as themes and categories. These themes are supported by literature. A detailed description of the demographics of participants is provided, along with the central story that emerged from the focus groups. This is to assist with easy transferability of the research findings into similar settings.

Chapter 4 – Development of a conceptual framework for the model to facilitate the teaching of caring to diagnostic radiography students

In this chapter details are given of the development of a conceptual framework for the model to facilitate the teaching of caring to first-year diagnostic radiography students. The central concept for the development of the model is explained and classified and a conceptual map is presented.

Chapter 5 – Description of the model to facilitate the teaching of caring as part of a culture of caring for diagnostic radiography students

The model for facilitating the teaching of caring to first-year diagnostic radiography students is presented graphically. The purpose, structure and assumptions are described. Guidelines to implement the model are provided and an evaluation of the model is presented.

Chapter 6 – Conclusion, challenges, recommendations and original contribution

A critical reflection on the research process is given. The challenges encountered during the research are discussed and the research is evaluated for its contribution to the knowledge of the profession.

Have You Earned Your Tomorrow

By Edgar Guest

Is anybody happier because you passed his way?

Does anyone remember that you spoke to him today?

This day is almost over, and its toiling time is through;

Is there anyone to utter now a kindly word of you?

Did you give a cheerful greeting to the friend who came along?

Or a churlish sort of "Howdy" and then vanish in the throng?

Were you selfish pure and simple as you rushed along the way,

Or is someone mighty grateful for a deed you did today?

Can you say tonight, in parting with the day that's slipping fast,

That you helped a single brother of the many that you passed?

Is a single heart rejoicing over what you did or said;

Does a man whose hopes were fading now with courage look ahead?

Did you waste the day, or lose it, was it well or sorely spent?

Did you leave a trail of kindness or a scar of discontent?

As you close your eyes in slumber do you think that God would say,

You have earned one more tomorrow by the work you did today?

CHAPTER 2

RESEARCH DESIGN AND METHOD

"I've learnt that people will forget what you said,

People will forget what you did,

But people will never forget how you made them feel"

Dr Maya Angelou

The purpose of this chapter is to describe the research methods and design undertaken to conduct this study. A validation for the research method utilised to answer the research problem and question will also be provided.

2.1 INTRODUCTION

The research questions that arose from the problem statement for this study were: What does caring mean to a first-year diagnostic radiography student? What can be done to facilitate the teaching of caring to first-year student diagnostic radiographers? For this reason, a qualitative, theory-generating research design was chosen.

2.2 PURPOSE OF THE RESEARCH

The purpose of this study was to gain an understanding of caring among first-year diagnostic radiography students. Based on this understanding, a model was developed and described. At this stage of the research, caring was generally understood as "an act of kindness, compassion and understanding towards another individual" (Bolderston 2016; Paulson 2004; Flynn 2016).

2.3 RESEARCH DESIGN AND METHOD

The research design used in this study was a qualitative, theory-generating, exploratory, descriptive and contextual research design, with the use of appreciative inquiry as an interview technique.

2.3.1 Theory generating

A theory, as defined by Chinn and Kramer (2011:257), is "an expression of knowledge within the empirics pattern; the creative and rigorous structuring of ideas that project a tentative, purposeful and systematic view of phenomena". Wacker (1998:361) states that theory generation is significant as it stipulates a structure for analysis and is a necessity for real-world problems. Reality should be accurately expressed in the theory that is generated (Chinn & Kramer 2011:155). Research within the radiography context is still in its early stages; hence there is a need for new research and theory-generating research within the profession. Radiographers need to be more involved in the profession and are encouraged to undertake research (Malamateniou 2009:2). Similarly Nightingale (2016:265), indicated that it is essential for radiography to increase the quality, quantity and impact of research with the aim to reinforce evidence based studies. Additionally the author emphasised that research in education should be a core function alongside teaching (Nightingale 2016:265). Based on this understanding, a theory-generating design was deemed appropriate. The theory generated in this study was for the purpose of facilitating the teaching of caring to first-year diagnostic radiography students and also to make a contribution to the body of knowledge in diagnostic radiography.

2.3.2 Qualitative

Qualitative research permits the researcher to become involved in the research process and is very fluid in nature (Corbin & Strauss 2015:4). Qualitative research is used for understanding aspects in different fields, with the use of words as opposed to numbers (Brikci & Green 2007:2). Therefore, it is described as a method used to gain understanding of a phenomenon or various phenomena (Morse 2012:2). According to Morse (2012:3), qualitative research provides definitions, understandings of perspectives and descriptions of processes within the health sector.

Corbin and Strauss (2015:5) state that a possible reason for conducting qualitative research is "to explore areas not yet thoroughly researched". Currently, there is no research available on the understanding of caring among first-year diagnostic radiography students, thus making a qualitative design appropriate. This allowed for the exploration of the phenomenon of caring in order to generate a new theory. Morse (2012:3) states that while qualitative research is a major contributor to understanding

health concepts, most research is only descriptive and very few models or theories have been developed from this method. This study aimed to change this by using a qualitative research method and then using the data to develop a model.

2.3.3 Exploratory

According to Davies (2011:2), "exploratory research is a methodological approach that is primarily concerned with discovery and with generating or building theory". Similarly, Stebbins (2012:2) describes exploratory research as a method of discovery constructed on detailed description and understanding of a phenomenon in life. Davies (2011:2) describes the researcher as the explorer without a fixed method to perform inquiry. Exploratory research is seen as a very flexible method, yet at the same time it is a very thorough, scientific process (Davies 2011:2; Stebbins 2012:2). The findings are usually associated with descriptive facts, social processes and the beliefs of the group being studied (Stebbins 2012:2). Based on the above explanation, exploratory research was reasoned as appropriate for this study because little is known about caring and I aimed to explore the concept and add to the body of knowledge of diagnostic radiography.

2.3.4 Descriptive

Descriptive research provides detailed descriptions of an event or occurrence (Corbin & Strauss 2015:12). This type of research aids in providing understanding of abstract ideas (Corbin & Strauss 2015:12). It offers a picture of the phenomenon as it transpires naturally and aids in describing the variables so as to answer the research question (Brink et al. 2012:112). A descriptive research design was acceptable because this research study was aimed at acquiring new knowledge on understanding the phenomenon of caring among first-year diagnostic radiography students. This design was also appropriate in this study as the objective was to generate a new theory in the form of a model.

2.3.5 Contextual

Corbin and Strauss (2015:155) state that in order to fully understand a theory we have to place it within a context. A lack of context only provides description. These authors further explain the term "context" as providing information about the events, conditions or circumstances that form part of the outcome (Corbin & Strauss 2015:155). This type

of research approach is utilised in a constructivist paradigm in which the researcher believes that reality exists within a context (Polit & Beck 2012:12). In order to achieve adequate understanding of a phenomenon, the researcher must closely interact with the study participants and the context in which the phenomenon occurs (Polit & Beck 2012:12).

The research questions asked in this study are very specific to the profession of diagnostic radiography and radiography education, in a South African context. Therefore the study was considered to be contextual in nature. The study findings are not expected to be generalised, but rather viewed within the context of diagnostic radiography.

2.3.6 Appreciative inquiry

Appreciative inquiry (AI) is an approach used to better understand a concept or phenomenon by acknowledging the good and creating an ideal future (Preskill 2011:2). Cooperrider and Srivastva initiated AI as a method of action research to encourage generating innovative ideas and bringing about new possibilities (Zandee 2014:2). These creators of AI believe in a collaborative approach of solving problems by engaging individuals to share knowledge of transformation (Zandee 2014:2). It is believed that when we focus on something, it becomes true; with AI when we ask questions in a positive manner, it influences individuals to think and behave in a positive way (Preskill 2011:2). Appreciative inquiry is slowly becoming a popular interview tool (Preskill 2011:3).

Appreciative inquiry is grounded on two important principles. The first is that professional organisations are socially constructed and this creates the context in which people act and interact to generate new realities (Richer, Ritchie & Marchionni 2009:948). The second principle is that careful and close attention must be paid to the process of change as opposed to focusing on problem-solving (Richer et al. 2009:948). Focusing purely on problems can be seen as discouraging (Maclean 2007:702). Cooperrider stated that "'we are looking at a positive revolution" (Maclean 2007:703). This method promotes co-participation and is a way of reducing resistance as individuals have a chance to share their ideas (Maclean 2007:703).

Michael (2005:222) explains the image of a plant being drawn to light as being similar to people being attracted to the idea of a brighter, more positive future. This can be achieved through methods of encouraging uplifting experiences from the past and present (Michael 2005:222). Richer et al. (2009:948) assert that healthcare is at a time of radical change. Appreciative inquiry is an innovative method that allows healthcare professionals to explore the potential of change by moving the focus away from the problems at hand.

Appreciative inquiry was deemed appropriate for this study in order to answer the research problem and question. As an interview technique, AI permitted diagnostic radiography students to share their positive stories and experiences and to work collectively, in open discussions, to generate innovative ideas to developing a caring identity for diagnostic radiography students.

2.4 REASONING STRATEGIES

There are three types of logical reasoning, namely deductive, retroductive and inductive. Reasoning strategies are used to understand a phenomenon by combining experience, problem-solving and formal thought processes (Polit & Beck 2012:11). In this research study, all three types of reasoning were used to develop, describe and evaluate the model.

2.4.1 Deductive reasoning

Deductive reasoning is a method of predicting a certain outcome based on general principles (Polit & Beck 2012:11). This type of reasoning moves from the general to the more specific, which is necessary to investigate whether a predicted pattern does transpire (Babbie 2011:23). Deductive reasoning was necessary in this study as the concepts of a model are abstract in nature and require guidelines in order to operationalise the model. Guidelines for the operationalisation of the model in this study were based on deductive reasoning.

2.4.2 Retroductive reasoning

Retroductive reasoning is a form of conceptualising in which the researcher is required to identify situations which must occur for the concepts to exist (Meyer & Lunnay 2015). Retroduction can be described as a "backward approach to logic modelling"

with an effort to understand factors that were required for a phenomenon to occur (ACAPS 2016:7). This type of reasoning is based on the grounds that social reality comprises structures and internally related objects (Meyer & Lunnay 2015). Therefore, retroductive reasoning is appropriate for theory-generating research especially in a field such as diagnostic radiography where there are minimal theories. In this study, this type of reasoning was used to create a theory based on the concepts identified in the data collection and analysis.

2.4.3 Inductive reasoning

This type of reasoning is based on personal observations to bring about generalisations (Polit & Beck 2012:11). Inductive reasoning progresses from a specific observation to a widespread pattern (Babbie 2011:23). The researcher is required to observe the data and create generalisations to describe relationships between observed subjects (Babbie 2011:50). Inductive reasoning was based on my reflection, observation of participants and understanding of the data in order to develop and evaluate the model. It was used to establish the central concept.

2.5 THEORY-GENERATING RESEARCH METHOD

Below is a description of the steps followed in the research method.

2.5.1 Step 1: Concept analysis

Concept analysis is a process of providing clarity and understanding of certain words or concepts (Baldwin 2008:50). Within the context of research, a concept analysis is an ideal way of adding to the scientific body of knowledge within certain domains (Baldwin 2008:50). Walker and Avant are theorists that offer a method for concept analysis. The Walker and Avant method provides a well-defined and systematic approach to developing meaningful results (Baldwin 2008:52). The first step in this method is identification of a central concept.

2.5.1.1 Identification of a central concept

The first step entailed exploring and describing the understanding of caring among first-year diagnostic radiography students. This was undertaken by means of focus group interviews using AI as an interview technique.

Ethical clearance was obtained from the University of Johannesburg (Appendix A) and permission was obtained from the head of the MIRS Department (Appendix C). Since the participants were students that I was not lecturing, I had to make arrangements with a fellow lecturer to meet all the first-year radiography students. The clinical rotation in first is different from other years as the first year students spend the first half of the year on campus for theory lectures and thereafter start their clinical time in June. At the time of data collection, these students had spent approximately 8 weeks in the clinical environment. During this time, I explained the purpose of the study and what participation in the study would mean. I also indicated that this study focused on diagnostic radiography students only. Information sheets were given to all first-year diagnostic radiography students and I ensured that they were aware that participation was completely voluntary. Since the participants were students, emphasis was placed on confidentiality of the focus group interviews to ease any concern they may have had.

Due to the participants having busy schedules with lectures and other assessments, arrangement of an appropriate time for the focus group interviews was vital. I liaised directly with the class representative to ensure the arrangement of convenient dates and times for the focus group interviews. Some volunteers emailed me directly and some engaged with the class representative. The population for this study comprised of first-year diagnostic radiography students registered at a higher education institution in Gauteng. Purposive sampling was used to select interview participants whereby only students who met the inclusion criteria, of being first year and in the diagnostic discipline, were included (Brink et al. 2012:141). Purposive sampling allows for information-rich participants to be chosen to provide knowledge specific to the research study. Additionally there was a need for the participants to be comfortable conversing in English, as the interviews were conducted in English.

Focus group interviews was used to collect data as this method allows for participants to share their stories and experiences with each other (Brink et al 2012:158). Focus group interviews permit the generation of new ideas and allows for a wider range of opinions to be taken into consideration (Brink et al 2012:158). Similarly Nyumba, Wilson, Derrick and Mukherjee (2017:21) describe focus group interviews as "a platform for differing paradigms or worldviews". Because caring is a concept that has

no exact definition, I believed that using focus group interviews would be an appropriate method in obtaining a meaningful understanding of the concept. Additionally, when participants begin to share their stories and experiences, it is anticipated that this would encourage others to engage in the conversation.

The focus group interviews were held in the Medical Imaging and Radiation Sciences Department boardroom. This was an ideal venue as it was away from lecture venues and it was quiet. The boardroom was also convenient as it was on the same campus where diagnostic radiography lectures take place. Most focus group interviews took place after lectures, so I provided participants with light snacks and drinks. There was a total of 4 focus group interviews held till data saturation was achieved with a total of 19 participants. The duration of each interview varied depending on the participants stories shared. The range was from 45 minutes to 1 hour 15 minutes.

The 4D model of AI was used in the focus group interviews (Michael 2005:223). The four questions were printed on four separate A4-size pages and were placed in the middle of the table for all participants to see. This was seen as a way to relax the participants and to make them aware that there were only four questions and to also ensure that they knew beforehand what to expect. I tried to ensure that the interview sessions were comfortable and that the questions flowed from one to the other. I was familiar with the questions so it was easy to engage with the participants in a more natural way. Regularly throughout the interviews I attempted to paraphrase the discussions to ensure that I fully understood the conversations and that my interpretation was accurate (Appendix F).

To ensure clear audibility of the participants, the audio-recorder was passed from one participant to another. I engaged with follow-up questions where appropriate and I encouraged all participants to share their stories. At the end I thanked all participants for their time and contribution to the study. Participants were very excited at having been part of the study and making a difference. I also noted that many participants were quite eager to learn about the end results of the study. They were keen and looking forward to being able to contribute to the profession and radiography education. After every session, I wrote my own personal field notes (Appendix G). Additionally, after each focus group

interview I had a debriefing session with my supervisor which helped me to reflect on the stories shared.

Holloway and Wheeler (2010:282) describe the process of data analysis in three steps:

- ❖ Transcribing interviews and sorting field notes
- ❖ Organising, ordering and sorting the data
- ❖ Listening to and reading or viewing the material collected repeatedly

Once data saturation was reached, the audio files were given to a transcriber for verbatim transcription of the interviews. Data saturation is when no new information is being collected. The stories shared were very similar with no new ideas being formed (Brink et al. 2012:144).

The next step was to organise and sort the data. In order to do this, I listened to the audio-recordings and read through the entire transcription to gain an overall understanding of the data. I then decided to take some time to reflect on my understanding of the data. I created summaries of the participants' answers. I took four sheets of paper, one for each question asked. I then read and reflected on the first focus group interview and then started to combine similar concepts for each question from this interview. This was recorded on the four sheets of paper. I went through this process for all the remaining focus group interviews.

I was then left with four sheets of paper with similar concepts for each question asked. I read through each question with its corresponding concepts and reflected on them. I then reviewed my field notes alongside these identified concepts. The data was then viewed as a whole and not as individual questions. Initial themes and categories were developed based on the concepts. After identifying the themes and categories, I went back to the data to find supporting verbatim quotes.

When my data analysis was completed and I was satisfied with my findings, I developed final names for the themes and categories. To ensure a true reflection of the shared stories and experiences, I scheduled a meeting with the participants to share the themes

and categories with them. This enabled member checking and allowed participants a chance to see and hear themselves in the data analysis.

Once I was content that the themes and categories were a true reflection of the stories shared by the participants, I used the process of inductive reasoning to combine themes and to identify a central concept for the development of the model.

The researcher is acknowledged as the main data collection tool in qualitative research. Consequently, there is a need for me to reflect on how my personal story would contribute to the study.

I started my diagnostic radiography career as a student radiographer in a public health sector training hospital. I felt a sense of belonging as the patients I worked with were very ill and I felt that I could make a difference. I enjoyed the interactions with the different patients and I found the clinical environment to be very conducive to learning.   Working a night shift with trauma doctors and aiding in imaging of seriously wounded patients was very satisfying and fulfilling. I knew I was able to handle the pressure of the situation well.

As a qualified diagnostic radiographer, I completed my community service in a rural hospital. This experience was very different as the types of patients I interacted with were very different. This environment brought a whole new array of challenges. I learnt a great deal about working as a team. We were also expected to work more closely with the general physicians and surgeons as there were no radiologists at this hospital.

I continued to work in the public health sector for a few years. For me this sector was more meaningful. The patients were poor and had no other resources. They were also very thankful and this gave meaning to my job. I did work for a short period in the private sector. Here, I found the patients to be more demanding and healthcare professionals had greater expectations. I was restricted by not being able to assist patients further as there was always a cost factor involved. I did not feel that I was making any contribution in this type of environment and so I went back to the public sector.

Subsequently, I was offered a position to join the Durban University of Technology as a clinical instructor. I was very eager to take on this opportunity as I felt I could contribute

positively to the profession. I had always had a passion for teaching and I believed this was the right path for me. I taught different subjects within the diagnostic radiography programme at the university and I worked in the university's X-ray clinic, imaging patients. This enabled me to still engage in the practical component of my profession. Currently, I lecture at the higher education institution where this research study was undertaken.

During the focus group interview process I had to be cautious not to become personally involved in the storytelling. I did my best to remain professional throughout the interviews. I made a conscious decision to keep reminding myself of my role. The process of bracketing was initially difficult but I was able to be cognisant of my thoughts throughout.

During focus group interviews, participants must be as comfortable as possible to ensure easy conversation and discussions. This was achieved by welcoming the participants a few minutes earlier to the interviews so that they could have a light snack and beverage. This also gave them time to relax and feel at ease with the environment. They were all from the same level of study (first year), so they were familiar with each other. This made it easier for them to interact and share stories comfortably.

I also spent a few minutes before the interviews addressing any queries or concerns the participants had. I explained the purpose of the study and emphasised confidentiality. Participants were also informed of their right to withdraw from the study if they wished to do so. The function of the audio-recorder was explained to alleviate any tension or anxiety they might have had.

Focus group interviews were conducted with first-year student radiographers who were still having lectures and writing some assessments. I was cautious of this and ensured that my timing and scheduling of interviews did not disrupt any lectures. It is for this reason that most of the focus group interviews took place after lectures were finished for the day. This also put students at ease without fear of missing classes.

As the participants were students, I did not want to come across as intimidating and I wanted them to feel free to share their stories. I did not want my formal clothing to make

participants feel like I was the lecturer conducting these interviews. I dressed smart casual.

In order to engage in a very natural conversation with the participants, I made an effort to ensure that I knew my questions well. I did, however, have the questions printed out for participants, so there was an option to review the questions if necessary. Once again, throughout the process I acknowledged participants' stories and tried not to overstep my role as facilitator. I encouraged flow of conversation from all participants. I did not have any participant that was overly quiet and not willing to share. Participants were very eager to tell their stories. I consistently paraphrased answers to ensure that I was understanding their stories correctly.

2.5.1.2 Concept definition and classification

The second step of the concept analysis, as explained by Walker and Avant, is to determine the aim or purpose of the analysis. This step entailed defining and explaining the central concept. In the third step, dictionary and literature sources must be consulted to identify the different uses of the concept. The fourth step is to determine the attributes associated with the definition of the concept. Also part of the Walker and Avant concept analysis is to construct a model case with all the critical attributes and to describe a contrary case that will show the complete opposite of what the concept is (Baldwin 2008:50).

These steps were adhered to and followed accordingly for this research study. Dictionaries were used to define the related concepts and literature sources were used to add to these definitions. An evaluation of these definitions allowed for the development of fundamental criteria/attributes for the central concept. A model case depicting the ideal of the central concept was created, along with a contrary case to depict the opposite of what the central concept stands for. The critical attributes are well illustrated in the model case.

The rules for definitions as identified by Copi and Cohen (1994:192-196) state the following:
- The attributes of the concepts, along with their relationships, must be clearly indicated and well incorporated into the definitions.

- A too circular, too broad or too narrow definition should be avoided.

- The use of ambiguous and vague language should not be included in the definition.

- The definition should be as affirmative as possible.

To ensure that the definitions of the central and related concepts were well formulated, the rules stipulated by Copi and Cohen for definition construction were followed.

The survey list by Dickoff et al. (1968:435) was used to classify the defined concepts. The questions in the survey are:

- ❖ Who is the agent?
- ❖ Who is the recipient?
- ❖ What is the context?
- ❖ What are the dynamics?
- ❖ What is the process?
- ❖ What is the terminus?

The person carrying out an action is referred to as the agent. The recipient is the individual receiving the action from the agent. The area in which the action occurs is the context. Dynamics signifies the internal motivation of the agent and the recipient that contributes to reaching the desired outcome of the agent. The process is the procedure of action taken by the agent. The terminus is the end result of the actions performed by the agent with the recipient.

2.5.2 Step 2: Relationship statements

With the intention to develop an initial conceptual model, relationship statements were constructed based on the identified concepts from step 1 (concept analysis). Researchers use relationships to show how one concept affects or is connected to another (Polit & Beck 2012:54). Relationship statements form the structural correlation between the concepts of the theory. These interactions can range from simple to more complex statements (Chinn & Kramer 2011:180).

For this study relationship statements were utilised to create meaning and understanding of the interactions between the concepts identified in step 1. Chinn and Kramer (2011:180-190) describe the process of developing relationship statements. This process was adhered to in this study in order to develop relationship statements.

2.5.3 Step 3: Description of a model

A description of the theory is a method of answering specific questions, based on the researcher's own understanding of the different components of the theory. A conceptual model was created in this step. The guidelines of Chinn and Kramer (2011:184-205) were used for the description and reflection of the empirical theory.

Six questions are posed by Chinn and Kramer in order to describe the theory:

❖ **What is the purpose of the theory?**

This question focuses on why the theory was developed and requires reflection on the context and situation in which this theory can be used (Chinn & Kramer 2011:195). The purpose of the theory in this research study was to understand phenomena which would aid in the teaching and development of a caring identity in a specific group of professionals. The ultimate goal of this study was to gain meaningful insight into the concept of caring within the context of diagnostic radiography. Based on that understanding, a model was created.

❖ **What are the concepts of this theory?**

Concepts are identified by discovering words that give meaning to objects or properties in a theory (Chinn & Kramer 2011:188). This can be achieved by describing vital ideas and explaining how they are interrelated. The concepts and their relationships are important for the researcher to be able to establish the central concepts of the theory. In order to answer this question, the researcher must organise the concepts into either a single major concept with sub-concepts or several major concepts and sub-concepts as well as their relationships with each other (Chinn & Kramer 2011:188).

❖ **What are the definitions in this theory?**

A definition is the meaning associated with a concept. The researcher is required to provide definitions for the concepts in the theory. These definitions provide understanding of the abstract nature of the concept. The definitions of concepts may be either explicit, implicit or both (Chinn & Kramer 2011:189).

❖ **What are the relationships in this theory?**

The relationships show the connection between concepts and this may take on numerous forms. The emerging relationships provide evidence of the purpose of the theory. Relationships can be in descriptive, explanatory or predictive form. Descriptive relationships simply state "what something is", whereas explanatory relationships provide the reasoning. Prediction provides the anticipated conditions that may change the phenomenon (Chinn & Kramer 2011:191).

❖ **What is the structure of the theory?**

The structure of the theory provides the general outline of the conceptual relationships. The structure becomes challenging to create if the relationships are not clear. A theory's structure is useful in guiding perceptions and may take on any number of forms (Chinn & Kramer 2011:191-193).

❖ **What are the assumptions in this theory?**

Chinn and Kramer (2011:194) explain assumptions as "those basic givens or accepted truths that are fundamental to theoretic reasoning". These can be in the form of factual or value assumptions. Assumptions are important for an overall understanding of the theory and the conditions on which it is based (Chinn & Kramer 2011:195).

Evaluation of the model is necessary and this was achieved through critical reflection. Critical reflection provides an understanding of how appropriate the theory is in practice, research and education (Chinn & Kramer 2011:197). Chinn and Kramer (2011:197) list five questions for critical reflection that need to be answered:

❖ **How clear is this theory?**

This question refers to comprehension and clarity in the interpretation of the theory and how the ideas are conceptualised. Chinn and Kramer (2011:198) suggest considering semantic clarity, semantic consistency, structural clarity and structural consistency when establishing clarity of a theory. Semantic clarity refers to a theory having the same meaning irrespective of who reads it. Semantic consistency refers to the explicit use of concepts that are aligned with their definitions. Structural clarity refers to how easily recognisable the relationships are within the conceptual framework. Structural consistency refers to the consistent use of a structure or structures to connect concepts in the theory creating a structural map of clarity (Chinn & Kramer 2011:201).

❖ **How simple is this theory?**

Simplicity is achieved by the use of minimal elements in each descriptive category. Complexity of a theory means there are many different relationships between concepts (Chinn & Kramer 2011:201). For this study a simple theory was chosen with the aim of operationalising the model.

❖ **How general is this theory?**

The generalisability of a theory implies that the theory can be applicable to a broad range of situations. This study aimed at developing a theory that was contextualised in nature, thus making it a theory that is less general.

❖ **How accessible is this theory?**

Accessibility of a theory refers to the attainability of the purpose of the theory. Empirical indicators are interpretive experiences that can be utilised to assess the phenomenon to ensure that the purpose of the theory is achieved in the manner that the theory suggests (Chinn & Kramer 2011:203). For this study this was achieved by assessing the relationships between concepts, applying the theory and by clearly explaining conceptual meanings.

❖ **How important is this theory?**

The importance of a theory is linked to its clinical significance. Important theories focus on bringing about change to the future and can be used in research, education and clinical practice (Chinn & Kramer 2011:204).

2.5.4 Step 4: Guidelines to operationalise the model

In order to implement the processes of the model in a higher education setting, guidelines are described. Each guideline is outlined with an aim and an action for achieving the outcome. This will be discussed further in chapter 5.

2.6 TRUSTWORTHINESS

Lincoln and Guba's criteria for trustworthiness ensure that the findings are a true reflection of the participants (Shenton 2004:64). The criteria are credibility, transferability, dependability and confirmability (Shenton 2004:64). The criteria for each of these are illustrated in figure 2.1 below.

Credibility

- prolonged engagement in the field
- reflective notes
- triangulation
- peer review
- member checking
- in-depth interviews

Dependability

- step-by-step process of the research method
- detailed audit trail
- detailed description of the research methdology of theory development and model development

Trustworthiness

Transferability

- purposeful sampling
- description of the demographics of the sample
- dense description of the results of the interviews and of the model development

Confirmability

- keeping an evidence trail
- triangulation
- peer review
- confirmability audit

Figure 2.1: Strategies to ensure trustworthiness

Credibility was ensured by following the strategies of prolonged engagement, member checking, triangulation of data, reflective field notes, peer review and in-depth interviews (Polit & Beck 2012:585).

Prolonged engagement was achieved as I am a diagnostic radiographer who has worked in both private and public sector clinical environments. I have also worked in more than one province in South Africa. I worked not only as a clinical diagnostic radiographer, but also as a clinical tutor working directly and engaging with radiography students in the field. While I am currently employed at the higher education institution where the study was conducted, the participants were not students that I lectured. So they were familiar and comfortable with me as I am a lecturer on campus, but I was not directly involved in the teaching of their academic modules.

To ensure credibility of the results, the consistent question I asked myself was "Do my results resonate the truth of reality?" My answer to this question was "yes" because I had sound knowledge of the participants as well as the research context of the phenomenon, which enabled me to be confident of the themes and categories that I developed. I knew that these were in keeping with my understanding of diagnostic radiography. The themes were shared with all first-year students as an oral presentation. After the presentation, a debriefing session was held with the participants of the study. They acknowledged the themes and were satisfied that they could hear themselves in them based on the verbatim quotes presented to them. This was a form of member checking (Creswell 2007:208; Creswell 2009:191). This process allowed participants to provide input and verify the accuracy of my interpretation.

Triangulation of data as a form of credibility was ensured as I kept reflective and descriptive field notes throughout the interview process to ensure that my own personal feelings and perceptions were not guiding the participants' responses. The combination of descriptive and reflective field notes with the interview data allowed for triangulation (Creswell 2007:208; Creswell 2009:191).

A doctoral committee forum with experienced qualitative research peers and colleagues, who were neutral and unbiased to the study, was arranged. The findings of this study and the model was discussed. The results of the focus group interviews were presented at the international Qualitative Health Research Congress at Sun City, South Africa (Naidoo, Lawrence & Stein 2018a). Subsequently, as a method of peer review, the results of the focus group interviews were written up in the form of a journal article in a peer-reviewed, international journal. Reviewers from the journal provided feedback on the themes, which was taken into consideration and changes were made accordingly (Naidoo et al. 2018b). The draft article was also shared with the participants as a form of member checking.

The last step to ensure credibility was conducting in-depth focus group interviews. In-depth interviews allowed me to gain valuable insight into and understanding of what caring meant to first-year diagnostic radiography students. To acquire this deep, meaningful understanding, the interviews were structured to allow each participant a chance to share their experiences and stories.

Providing a rich, detailed description of the research results ensured the **transferability** of the study findings to a similar setting or population (Creswell 2007; Creswell 2009:191-192; Polit & Beck 2012:585). Purposeful sampling was used to gained information-rich data from the participants (Brink et al. 2012:173). In order to ensure transferability of this model to a similar setting, the research report provides detailed descriptions of the participants, location of the study, findings of the focus group interviews and the process of the model development (Creswell 2007:209).

Dependability of this study was confirmed by providing a comprehensive explanation of the study methodology. This provided details on how the study was conducted and how the data was analysed. The processes followed for the model development and theory generation are explained in detail in a systematic way to allow for easy implementation in a similar context.

Triangulation of data, reflexivity and conducting a confirmability audit trail were performed to ensure that the study findings were shaped by the participants rather than myself as the researcher. These methods allowed for **confirmability** of the data.

To ensure that my own personal feelings and experiences did not influence the study data collection and findings, I continually reflected throughout the process. Keeping reflective field notes during and after the focus group interviews allowed me to keep myself separate from the study.

A detailed methodological audit trail is provided to demonstrate evidence of my interpretation of the data. The audit trails include audio-recordings, transcribed data and field notes for a period of two years. At the beginning of this research report there is a detailed explanation of my metatheoretical assumptions to counter any researcher bias. Triangulation of data was in the form of peer reviews of the data findings, debriefing sessions with my supervisor and reflective field notes. These methods ensured that the data was a true reflection of the participants and not of myself. As a method of peer review, the model was evaluated by a doctoral committee of experienced qualitative researchers.

2.7 CONCLUSION

The research design for this study was specifically selected to generate a new theory for the profession of diagnostic radiography education. Appreciative inquiry was chosen as an interview technique but was not utilised in its fullest capacity of action research. The positive nature of AI allowed for focusing on the good and enabling participants to envisage the ideal future. This permitted diagnostic radiography students to assist in bringing about change. Detailed description of the research process and findings ensured trustworthiness of the study. This will also assist in easy transferability of the study findings to a similar context.

Lastly, this study is aimed at bringing about change and improving the future of diagnostic radiography both academically and clinically. I would like to end this chapter with the wise words of Mahatma Gandhi because I believe in change and a positive future.

Keep your thoughts positive

Because your thoughts

Become your words.

Keep your words positive

Because your words

Become your behaviours.

Keep your behaviours positive

Because your behaviours

Become your habits.

Keep your habits positive

Because your habits

Become your values.

Keep your values positive

Because your values

Become your destiny.

Mahatma Gandhi

CHAPTER 3
RESULTS OF APPRECIATIVE INQUIRY INTERVIEWS WITH FIRST YEAR DIAGNOSTIC RADIOGRPAHY STUDENTS

Let us remember:
One book, one pen,
One child, and one teacher
Can change the world
Malala Yousafzai

In this chapter the results from the AI focus group interviews with first-year diagnostic radiography students will be presented. Identified themes and categories will be explored and contextualised with current literature. Detailed descriptions of the participants and themes will be presented. Verbatim quotes from the participants will be provided to support the developed themes.

Within a diagnostic radiography context, caring is still relatively new. Research has been undertaken to determine if radiographers apply a patient-centred approach and also to determine patients' perceptions of caring in a radiography department. Due to there being minimal literature on diagnostic radiography students' understanding of the concept of caring, literature from nursing and other healthcare professions was consulted for this study.

3.1 DEMOGRAPHICS OF THE PARTICIPANTS

The focus group interviews were conducted at the MIRS Department boardroom at a higher education institution in Gauteng. All first-year diagnostic radiography students were provided with information sheets and were invited to participate in the study. Nineteen participants volunteered. Four focus group interviews were conducted in total until data saturation was achieved. Three focus groups consisted of 5 participants and one group consisted of 4 participants. There were 7 males and 12 females. All participants were first-year diagnostic radiography students.

Dates and times for the interviews were discussed and arranged with the class representative to ensure that interviews did not affect lecture attendance. Data

collection commenced towards the end of the year, which is usually around the time of assessments. Once again, consultation with the class representative ensured no disruption of test schedules. Healthcare in South Africa consists of two sectors, public and private. Public health is funded by the government and is accessed by 80% of the population (Brand SA 2012). Participants consisted of both private and public health sector student radiographers.

3.2 THE CENTRAL STORY

*"Nothing great was ever achieved without enthusiasm.***"**
Ralph Waldo Emerson

Appreciative inquiry was used as an interview technique to conduct the focus group interviews. The 4D model of AI was employed, namely Discover, Dream, Design and Delivery.

The first question provided the participants with the opportunity to **D**iscover their understanding of the concept of caring. This allowed them to focus on the positive perceptions and attributes of the concept. The question asked was: "Tell me what caring means to you as a student radiographer?"

Secondly, participants were asked to **D**ream of an ideal future where they saw themselves as caring professionals. This provided participants with a limitless possibility to dream. The question asked was: "Describe how you see yourself in the future as a caring radiographer."

The third question posed to the participants was to **D**esign and create the skills and qualities they considered would be necessary for this ideal caring professional. The question asked was: "What do you think you will need in order to be a caring radiographer?"

The last question was the **D**estiny phase of the 4D model. Participants were asked to develop creative ways to achieve these qualities that they identified in the design phase.

The question was: "Tell me creative/innovative ways in which we can achieve this caring."

To promote a comfortable and more relaxed environment, I had printed out the four questions and displayed these on the table for all participants to see. Each question flowed easily from one to the other and at times participants would answer certain questions without me even having to ask the question. The central story that emerged from the data is illustrated below.

The central story guiding this research is one of a group of students who had a passion for being in the healthcare profession and the willingness to be taught how to be caring professionals. However, they found themselves in an environment that did not fully support the development of a caring identity. There was a clear sense of helplessness and feeling lost without having proper guidance. There was also a strong indication of not wanting to become like the current qualified radiographers who did not demonstrate adequate caring attributes. While they had a good understanding of what caring means, they did feel unprepared for daily interpersonal interactions and they were discouraged by the reality of the clinical environment.

When requested to explain their understanding of caring, stories shared were of an idealistic perception of caring. The participants described radiography as a people's profession and shared personal experiences that had led to their reasoning for choosing this career. Their stories showed a genuine altruistic interest in wanting to help others and making a difference to those in need.

When given the opportunity to dream of the ideal future and describe how they saw themselves as caring professionals, the participants expressed the desire to stay the same and possibly improve themselves. But there was a resonating response from the participants that they did not want to become like some of the radiographers they had witnessed in the past. Participants emphasised a need for having an all-around caring professional, one that was good to patients, students and other staff members.

When asked what they would need to be these caring professionals, it was very evident that the participants felt lost and were without guidance. They shared stories of patient

encounters that left them feeling emotionally vulnerable and not having any support system for this. The destiny phase saw participants share innovative and creative teaching strategies to improve caring. However, this willingness to learn and develop into caring professionals was challenged by the reality of the clinical environment and lack of adequate academic preparation for interpersonal interactions. The themes and categories identified from the transcribed data are presented in table 3.1 below and this will guide the discussion of the results.

Table 3.1: Themes and categories developed from the appreciative inquiry interviews

Themes	Categories
1. Caring as an integral part of a career choice	1.1 Idealistic perception and altruistic understanding of caring 1.2 Radiography is a people's profession 1.3 The "little gestures" approach to caring 1.4 Professional appreciation and motivation
2. Unpreparedness for interpersonal interactions	2.1 Lack of appropriate skills to interact with patients and colleagues 2.2 Lack of emotional support 2.3 Developing a more supportive teaching and learning environment
3. Barriers and enablers to the development of a caring identity	3.1 The disconnect from humanity 3.2 Identification and awareness of good and bad caring practices with a need for better role models 3.3 Workload pressures and time constraints 3.4 Feelings of professional pride and wanting to make a difference 3.5 Willingness to learn and improved learning strategies

3.3 THEME 1: CARING AS AN INTEGRAL PART OF A CAREER CHOICE

This theme focuses on participants' stories about personal experiences that impacted their choice of career. Caring for patients is very important in diagnostic radiography and requires radiographers to share this sentiment. An idealistic understanding of the meaning of caring was expressed by the participants. There was a keen understanding of the attributes and actions associated with being a caring professional. Additionally, this understanding of caring was also what attracted the participants of this study to radiography as they viewed radiography to be a people's profession.

When I reflect on my student years, starting the radiography programme, I remember feeling a sense of pride in my job. I knew, with every patient I X-rayed, I was making a difference by helping someone in need. My clinical training was at a public sector hospital and the patients were very grateful and appreciative. The participants of this study were no different as they shared similar sentiments of wanting to help people in need. They also expressed a genuine interest in their patients. Therefore, the stories shared were in line with my own personal journey.

3.3.1 Idealistic perception and altruistic understanding of caring

The participants of this study expressed a sincere and ideal understanding of the meaning of caring. Their explanation of caring included being compassionate, sensitive, showing concern, empathy and human acknowledgement. Additionally, the perception of placing the needs of the patient before their own was emphasised. This demonstrated a sense of altruistic caring for patients. This understanding of caring is depicted in the verbatim quotes below:

"ahhh caring for other people's needs and actually being respectful towards the other patients" FG1, P4

"Mmm…my take on caring is basically how we make our patients feel" FG1, P5

"I'll say caring is basically taking the patient's needs into consideration" FG3,P5

"Caring is kinda of a broad term, for me it's actually taking an interest in your patient" FG1, P1

"I feel like you have much more care for someone and for people around you when you placed yourself in the shoes of those people" FG2, P2

"Well, I think caring might be ehhh being compassionate and sensitive to every human being irrespective of gender, race and disability status and being able to understand the reactions and the circumstances that caused those reactions to get that person to be in that situation" FG2, P5

"So ehhh caring just basically means that you putting the needs of the patient before yours" FG3, P1

"Okay caring for me is to do something that you will like to be done to you, don't do something that you won't be like when is done to you. Just treat your patients as your family members not like a stranger" FG3, P4

"Okay. For, me I think caring…mhhh, it involves treating everyone the same way…equally. Uhm, for example if a patient comes in and it's a celebrity…you should treat him the same way as someone from a poor background or someone who's not a celebrity" FG4, P3

Caring is an abstract concept and the understanding of caring is subjective (Flynn 2016:29). Flynn (2016:29) describes the attributes of caring as showing kindness, being gentle and compassionate and demonstrating empathy towards patients. Bolderston et al. (2010:199) explain caring as a selfless act towards another individual. The authors further add that in medicine caring is seen as an art rather than a science with the demonstration of empathy, compassion and respect. The participants of this study explained their perceptions of caring in a similar way.

Phillips, Cooper, Rosser, Scammell, Heaslip, White, Donaldson, Jack, Hemingway and Harding (2015:403-408) conducted a qualitative study on the perceptions of caring among students entering the nursing programmes in the UK. This study reported on

the first phase, of a larger study, which explored nursing students' personal values and beliefs around caring and nursing at the beginning of their academic programme. The study findings illustrated that new nursing students have a clear understanding of caring skills and attributes. However, the participants were unable to clearly define caring (Phillips et al 2015:407). The results from the AI interviews of this current study reveal comparable findings as the participants also had a clear understanding of caring.

Watson's theory of human caring describes ten carative factors along with their processes and competencies (Watson Caring Science Institute 2018:3). The first two carative factors are "formation of humanistic-altruistic system of values" and "instillation of faith-hope". The first factor is related to a demonstration of selfless concern and being kind and loving to the self and others. The second factor is related to being genuinely present and listening to the patient. By doing this the professional will be able to instil faith and hope in the patient. The participants of this study shared sentiments of placing the patients' needs first as well as treating patients as humans. Some participants also spoke of being attentive, taking interest in and listening to the patient as a way of caring. It is evident that the participants' understanding of caring was closely related to these carative factors.

3.3.2 Radiography is a people's profession

Participants shared their personal stories for choosing radiography as a profession. Their life journeys had a major impact on them and they saw radiography as a profession for helping people. Daily interactions with people were what attracted them to the field. Participants were very eager and enthusiastic to share their stories. All these stories centred on caring, making a difference and giving back to society. These stories were very uplifting to listen to and to me this was an indication of the possibility of a better, caring radiography future. Personal reasons for choosing radiography as well as radiography being a people's profession are expressed below:

"my parents had an accident so with that mindset I was like, ok, fine and they weren't helped, like that was a government hospital, you sit there for hours and you not helped, so since that since that time I was like no I want to be someone

who's there for everyone, like I don't want money, I don't want anything. I want to do for the sake of helping" FG2, P3

"Mhhh what I so far very much like about radiography is what I can say is I love the patient mhhh interaction, I like you know talking to the patient, you know asking them how do you feel, and what's been happening…It make you feel good it make you feel like ahhh you know you do make a difference you are able to help someone" FG2, P2

"Ja, ja and like 98% of the time it (laughing) is working with people" FG1, P4

"I'm actually changing someone's life, and that's the reason why I want to become radiographer is because I want to help people, especially with my dad and all that with him being sick and all that so I actually want to give back to society because society has given me so much" FG1, P4

"my initial reason for being in the medical field was for the patient care, like I really wanted to help people" FG1, P3

"as a young child I wanted to be a radiographer working at the hospital when care for patients and stuff" FG3, P3

"I think mainly a lot of people turn to this profession because of the money…They don't fully understand that this is a professional where you interact with a lot of people" FG4, P3

"like us who are doing radiography some people come to this course not because they have passion for it or for they do have patient care…they come because they do have the marks for it. So that's where the problem comes in. It's because you do not have like uh, 'Ubuntu' if I may put it in my language" FG4, P1

An individual's choice of career path can be based on their personality, interests, values and family backgrounds. Lawer (2015:43) indicates that various social and

structural factors may impact a career choice positively or negatively. This can be based on how the individual preserves these social influences (Lawer 2015:43). These social influences include role models, parenting, peers and media (Lawer 2015:43). Within the context of South Africa is a concept called "ubuntu". Downing and Hastings-Tolsma (2016:215) describe ubuntu as human kindness and humanity to others. The philosophy of ubuntu can be found in different societies in Africa. Students brought up within this culture and teaching may be attracted to the healthcare profession because they want to help people. This concept and philosophy was mentioned in this study. There was a shared feeling that more healthcare professionals should be aware of ubuntu.

Literature indicates that nursing students start the programme being enthusiastic and wanting to make a difference (Phillips et al 2015:407). A qualitative, phenomenological study conducted among radiation therapists exploring their understanding of the caring showed that participants chose their career because they wanted to help people (Bolderston et al. 2010:204). Literature suggests that students generally choose radiography because they associate this profession with caring for and helping others (Ehrlich & Coakes 2017:63). Likewise, in this study most participants showed eagerness to want to help people in need based on their personal life experiences. They also conveyed sentiments of being passionate about caring for patients and loving the patient interaction.

3.3.3 The "little gestures" approach to caring

Radiography is a profession that requires professionals to put aside their preferences and treat each patient the same, irrespective of gender, age or race (Society of Radiographers of South Africa 2019). Participants of this study displayed a good understanding of what selfless caring for patients meant. All participants felt that the little gestures of caring, such as smiling, greeting the patient and asking the patient how they are, go a long way. Below are examples of the participants' experiences with patients:

"Okay for example if the patient come in and I'm gonna do a procedure on them I would like to divert their minds away from the procedure because some of them

will think that this things gonna hurt them, just ask them certain questions, like how was your day, what brought you here ask them about their children stuff like that, not going too personal but making the person feeling comfortable in my space and in that space as well" FG3, P2

"just smiling and just being patient with them and being as helpful as possible" FG1, P3

"What I basically, do I just greet the patient and ask them how was your day, what have you been doing, what time did you get here? And they will tell me that and that and I would like okay the X-ray just takes two minutes and then you go back somewhere, it is very…very fast and they feel relaxed after that" FG3, P3

"by showing empathy you can show it by your eyes, your touch and other things" FG3, P4

"ask your patient how the day is or ask them why they doing the X-ray and show more interest in your patient and be treated like how you want like to be treated" FG3, P5

"You address them as like a human being. Not…you do not demean them or anything and you…while carrying out the procedure, you handle them in the correct way" FG4, P3

"I think caring might be ehhh being compassionate and sensitive to every human being irrespective of gender, race and disability status and being able to understand the reactions and the circumstances that caused those reactions to get that person to be in that situation" FG2, P5

"and then if they come in with uhm…let's say a blanket if they are on a wheelchair…and they have a blanket on them, I'll only take out the blanket in the x-ray room rather than before we get in" FG4, P3

"you can make someone feel cared for without asking all this questions just by the way you speak to them or by the way you introduce yourself or explain the procedure. It hasn't anything to do with your day or whatever. It just make him feel like you speaking to me like a person" FG1, P5

"just generally taking that interest when your patients is talking even though they are rambling on for 20 minutes, not cutting them off and say okay we need to do this procedure now but rather be more gentle in your approach and saying...Oh: that's fascinating, can I position you while you carry on talking, something along those lines" FG1, P1

"patients becomes a number, in order to prevent that I tend to always ask them how the day has been, like when they started getting sick, what happened and all that and listen to their stories" FG1, P4

Studies have shown that patients value being acknowledged during examinations and procedures (Smith & Topham 2016:374). They expect to be involved in decision-making and to be given adequate information regarding their treatment and procedures (Bolderston 2016:356). While technology and equipment advancement assists healthcare professionals with their daily work, patients are unaware of these benefits. The patient only sees their interaction with the healthcare professional (McMaster & Degiobbi 2016:298). McMaster and Degiobbi (2016:298) add that it is the little gestures such as giving patients a warm blanket while they wait or simply just smiling and being reassuring that make a difference for patients. In Canada, radiation therapists opted to make personalised immobilisation masks as a little gesture for patients to take their minds off of the treatment (McMaster & Degiobbi 2016:298).

Smith and Topham (2016:375) explain patient-centred and family-centred care as a direct interaction with the patient. These authors identify listening and addressing patient concerns as one of the guidelines to patient-centred care. Bolderston (2016:359) emphasises introduction as a good tool for creating an equal relationship between the healthcare professional and the patient. Bleiker et al. (2016:257-262) undertook a literature review of compassionate care in radiography. Their findings

indicate that compassionate care consists of "small gestures" and the "power of touch" which do not require a large amount of time to do.

Hayre et al. (2016:249) refer to Brown's five listening responses: nodding, pausing to look at the patient, casual remarks, echoing and mirroring an understanding of what was said. These authors suggest that these listening skills can help radiographers when time is limited. The findings from this current study are clearly in line with literature from other radiography and nursing studies. Additionally, participants also indicated that these little gestures do not take a lot of time and are possible to do even in a busy department. Showing genuine interest in and listening to the patient by simple gestures such as asking the patient how they are or how their day was, was a feeling that resonated among the participants.

3.3.4 Professional appreciation and motivation

Stories of personal appreciation and gratitude from patients were told by many participants. These encounters made participants feel recognised and appreciated. They gave participants confidence and boosted their self-esteem and made them feel like they were making a difference. This feeling encouraged them to want to continue being caring professionals. Some of the stories shared about patient appreciation are reflected in the quotes below:

"I've had so many patients come up to me and say thank you to be so kind to me, thank you for caring for me and Like it actually makes me feel human…When they actually say thank you it makes me feel, I've changed someone life, like I've done something for someone" FG1, P4

"I'm grateful for my career that I'm helping people and I can see them they are good in life so you can leave a mark by that thing you are leaving a mark, that no, I've seen this and she was my patient, and now she's fine so for me I'm happy if that is happening" FG2, P1

"we did the X-rays then we were done and the way, it was occurring in the situation, the patient was happy even though she was waiting for a long, long, long time. She became happy, she came out of the room ehhh smiling and

everything and then when she reached down to the receptionist when we collect, where we write our reports and everything and the patient was like 'what year are you doing', and I'm like I'm doing first year and she was like ohh gosh 'I wanted to come to your graduation and be your sponsor or something', so it's basically how you treat the patient that matters" FG3, P3

"Uhm, there was this one day…I think we were few weeks…in like the very first time and there was this patient, an elderly patient…so I went in to the er…the chest X-ray and then when we came out she asked to see my qualified, anyone who was in charge. So I was a bit scared…I went away and then they talked, they talked and then my tutor came in. She was like, 'Don't be scared, nothing is worried.' Uhm, she just wanted to tell us…(clears throat) sorry…that you were very good in your service…So that really give me confidence" FG4, P3

"I think you know that feeling when in a patient mhhh really compliments you in, I mean you only spending about five minutes maximum but you know mhhh I've heard patient that there were there compliments saying that ohh you very nice, ohh you this and this and makes me feel good about myself so I think is something that, just you need to get in the habit of" FG3, P1

"the second year did everything on computer so I positioned the patient and I told her everything after the procedures she actually gave me a hug she said thank you very much this is awesome, you are a awesome student, you don't have to worry so, ja that set me at ease very much" FG4, P4

When staff feel supported and appreciated they display more compassion and empathy (Cornwell 2014). Appreciation and gratitude enhance employee happiness. Employee happiness in turn results in improved patient satisfaction, patient outcomes and caring (Corning 2015). Hader (2013:6) emphasises the importance of gratitude and appreciation of staff members and further states that "thank you" is a simple phrase that, if sincere and true, can never be overused. Sahl (2017:246) explains that employee turnover is greatly affected by a lack of appreciation and recognition for work done.

A qualitative study, analysing the thank you notes from patients that were admitted in an intensive unit, in France, revealed that patients need humanity and caring from healthcare workers (Herbland, Goldberg, Garric & Lesieur 2017:52). This study also indicated that patient gratitude boosts self-esteem and is an acknowledgement of accomplishment for staff (Herbland et al. 2017:52). Acknowledgement of achievements reaffirms the need to achieve certain goals (Hader 2013:6). Patient appreciation is not only associated with the technical aspects of examinations, but is also an indication of the human element of caring and professionalism (Herbland et al. 2017:52). A phenomenological hermeneutic approach study in Norway (Sneltvedt & Bondas 2015:557) revealed that nurses, working in nursing homes, acknowledge the recognition received from their patients as a way of strengthening their pride in the profession. While caring could be expected to be independent of affirmation, studies show that it is human nature to need acknowledgement. The findings from this current research study are in line with those in literature supporting appreciation and gratitude as a way of enhancing confidence and self-esteem.

3.4 THEME 2: UNPREPAREDNESS FOR INTERPERSONAL INTERACTIONS

This theme focused on participants' feelings of unpreparedness for their interactions with different types of patients as well as interactions with other staff members. Communication and listening skills were identified as areas that need more emphasis in their current academic curriculum. They also expressed feelings of not being fully equipped with the skills necessary to cope with difficult situations and patients. Many participants were faced with situations that had affected them emotionally and they expressed feelings of unease. There was also a sense of feeling lost and not having anyone to speak to or share their feelings with.

As a student radiographer I also encountered disturbing patient experiences. There were some senior staff members that were very supportive, but others were not interested in students. I could easily relate to the stories shared. While I listened to the participants' stories of their daily interactions with patients and how unprepared they felt, it really made me feel sympathetic towards them.

3.4.1 Lack of appropriate skills to interact with patients and colleagues

The stories articulated in this category reflect areas of concern when interacting with patients and colleagues. Lack of skills, identified by most participants, include communication, listening and conflict. However, a lack of communication skills was most evident. The participants' quotes below reveal their lack of preparedness:

"I think we need to get like just basic communication skills of not but not like the theory behind it as we did in professional practice we had this whole thing about communication…but we didn't actually do any of it we just wrote it down" FG1, P5

"improve on certain communications, like if you're not getting along with one of your co-workers maybe or your patient is extremely rude not just the theory behind what you supposed to do but actually seeing someone handle the situation ja" FG1, P5

"Uh, in terms of skills that we need to know, I think communication skill is very vital…because you can't go into an X-ray room and ask the patient what happened or what's wrong and then be busy with something else like you're not listening" FG4, P3

"I think now it's better, but the first week…we went to hospital; you were trying to find your feet so you didn't even know how to communicate with your patient…it's quite stressful" FG4, P2

"Uhm, there are those patients that never stop telling you what happened…they will go the extra mile to tell you, how they're living at home and stuff like that. You never know how to…like, how to stop them. I…at least I don't…without being rude" FG4, P3

"So I think like in every job there's like a little bit of psychology in it…So I think uh, maybe…I don't know…just having like a small part in our work put in [inaudible] saying like, 'Okay, this is the kind of interaction you can uhm, experience or this is what you need to do'" FG4, P4

"in professional practice we do communication but we do theories. I think giving us like a scenario or exposing us to situations like that, it will definitely help us more to communicate 'cause even cancer patients or anything like that" FG4, P2

"if they did teach a more structured way, you can't really teach structured way because each person is different but if you can teach skills, listening skills, speaking skills that will benefit a lot the younger student, role playing" FG1, P1

"So we've been talking about caring towards patients even in class we learn about patients we haven't we haven't like learn more about working in a group…Caring for each other, respecting doctors. We haven't learnt how to approach the doctors or how to approach" FG2, P3

"like actually doing and seeing how you can improve on certain communications, like if you're not getting along with one of your co-workers maybe or your patient is extremely rude not just the theory behind what you supposed to do but actually seeing someone handle the situation" FG1, P5

A study in the UK used a mixed-methods survey approach to gain information regarding student experiences of the transition to their first clinical placement. This study included radiography students, academic staff and clinical staff (Hyde 2015:242). The radiography students in this study shared challenging experiences, similar to those of the participants of this study, with different patient types during their first clinical placement (Hyde 2015:245). Communication with difficult and very ill patients, was also identified as a challenging area for the UK students and Hyde (2015:245) suggests the need for academic staff to work closely with the clinical team to overcome these challenges.

Clouder (2005) wrote a paper which explored the different ways in which students working in the healthcare professions experience a change in their identity when they are involved in discussions on caring. Her paper is based on two research studies, the first is a longitudinal study of the professional socialization of occupational therapy (OT) students, over a period of three years. The second was ongoing at the time of

publication, and involved the evaluation of the use of online discussion forums to enable peer support with undergraduate physiotherapy students. Clouder (2005:514) indicated that students need to be acquainted with a variety of different patient types from the very beginning of their education, in order to prepare them for reality (Clouder 2005:514). A lack of preparation to interact with patients could have a negative impact on caring for patients.

Additionally, Clouder (2005:506) argues that educators are not fully addressing crucial issues that students face in the clinical environment. She adds that if we do not address issues of caring, then we are not producing professionals that are "fit to practice" and "fit for purpose". Similarly, Sandvik, Eriksson and Hilli (2014:286) state that Dall'Alba's book on learning to be professionals criticises current academic programmes for not fully preparing students for the professional praxis. Academic teaching is usually focused on the "doing" skills rather than providing support for the transformation of students into professionals (Sandvik et al. 2014:286). Skills such as communication and listening are important for proper patient interactions and for students to become caring professionals.

Guo, Shen, Ye, Chen and Jiang (2013) developed a teaching model for caring in nursing in a Chinese context. These researchers fear that there is a superficial understanding of certain skills which allow for the development of knowledge but behaviour is unchanged (Guo et al 2013:913). This is apparent in the current study, as participants indicated being taught the theory of communication without any application of these skills. A study conducted in the UK among student nurses, starting the programme, found that some students believed that caring cannot be taught but they felt that communication and listening skills are vital and should be in the academic programme (Phillips et al. 2015:405). In this current research study the participants did not indicate that caring cannot be taught, but they did convey a need to be taught communication and listening skills. It is apparent from the above quotes that the participants of this study felt unprepared for the clinical environment. Phillips et al. (2015:403) suggest revisiting the current curriculum to ensure that there is a balance of clinical competence and the "softer skills" which are necessary for the healthcare profession.

3.4.2 Lack of emotional support

Participants shared distressing experiences of patient interactions that had left them feeling lost and emotional. Generally, there is an unspoken assumption that first-year diagnostic radiography students are emotionally prepared for the clinical environment and the different patient interactions they will have. The feelings voiced in the quotes below show an apparent lack of emotional support:

"My first time I was there we were in paeds…there's a skeleton survey and the chief in charge of paeds said to all the students, 'Okay, so there's uh, a dead baby and then we need to do X-rays. So it's your choice, do you wanna go or don't you wanna go?' and then others left…So I feel like they need to disclose everything. They also need to give us like uh, experience in those fields before we even enter them because just going in without knowing anything, it's difficult…For example, I didn't even know uh…the, the measures that you have to take before you touch a body" FG4, P1

"Uh, one of our guys in the practice gave feedback when he was uhm, at the practice late…He uhm, got someone…like a guy who was interested in him. So it was like…stuff like that is hard, like Iyah" FG4, P4

"what I'm saying is I still have nightmares about that little girl, about hearing her cry, while her mom was holding her, having her mom cried. I have had that permanently burned into my brain, I remember afterwards I had probably about 5 minutes before my next patient" FG1, P1

"I even…when I went to this ward for er…the psychiatric ward. My first time I was…yoh! I was…I was scared…" FG4, P1

"mmm…like there is one case where someone died it wasn't in our department it was like by the Cat lab but, mmm….and he is ehhh…I think it was his wife and ehhh…she got kicked out of the room and by the doctor and she started shouting at everyone and she was just like burst out in tears and I just…and I felt like I want to go up to her asking her what's going on but I just, I didn't feel comfortable cause I was afraid of how she was going to react" FG1, P4

"we like to think that each person is unique and different and that is true but there are certain ways to deal with things and once again we might be coming from you because I'm older, so I believe there is a way to touch on it that you not completely, that you've got the skills to deal with the situation but when we get there is not a complete freezing up… 'oh no I don't know what to do, I don't know what to say', there are skills and methods to sort of teach us how to put ourselves in that patient's shoes and how to... I don't feel like the university is done us justice in that part I feel they need to add a bit more of it" FG1, P1

Generally students face a number of different stressors during their academic years. However, healthcare students have the added stress of dealing with patients (Carvalho, Guerrero & Chambel 2018:35). Similarly, Alconero-Camarero et al. (2018, 94) suggest that research demonstrates that students with higher emotional intelligence have more effective methods of coping. Emotional intelligence has been acknowledged as an important element for healthcare students (Carvalho et al. 2018:35; Alconero-Camarero et al. 2018:94). Similarly, McNulty, Mackay, Lewis, Lane and White (2016:171) acknowledge emotional intelligence as a critical personality trait for healthcare workers. Emotional intelligence can be described as having the ability to monitor the emotions and feelings experienced by oneself and those of another person in order to steer one's thoughts and actions (Carvalho et al. 2018:35). Carvalho et al. (2018:35) argue that emotional intelligence may assist students in dealing with the different environments they encounter. According to Mackay, White, McNulty, Lane and Lewis (2015:205) radiography academic-theoretical curriculum as well as the clinical practice, could be factors that contribute to the development of emotional intelligence during higher education.

Students are very sensitive and require time and attention to be acknowledged and taught while in the clinical environment (Sandvik et al. 2014:288). Students require proper guidance and both physical and emotional support when needed. Although they do prefer to work independently, they still expect their clinical supervisors to be nearby if they need them (Sandvik et al. 2014:286). Educator emotional support is also necessary to improve students' motivation and engagement (Ruzek, Hafen, Allen, Gregory, Mikami & Pianta 2016:95). A demonstration of genuine concern,

understanding and respect for the student by the educator is seen as a way of providing emotional support.

Ultimately, if there is no smooth transition from the academic training to the clinical placement of student radiographers, there can be dire consequences (Hyde 2015:242). Students who have bad experiences and encounters with patients may develop low self-esteem (Hyde 2015:242). Alconero-Camarero et al. (2018:95) conducted a descriptive, observational and correlational study of second year nursing students in a Spanish University. Their study focused on analysing the relationship between simulated scenarios and emotional intelligence. According to the authors, simulation-based teaching has been reported to be successful in providing a realistic, safe environment for learning competency skills as well as allowing students to develop skills such as empathy (Alconero-Camarero et al. 2018:95). Additionally, blended teaching is another way of bridging the gap between reality and the student's expectation of the clinical environment (Hyde 2015:243).

3.4.3 Developing a more supportive teaching and learning environment

Diagnostic radiography students start their clinical rotations after only a few months on campus. There is an expectation for the clinical training venues to be willing and able to teach students. Regrettably, participants shared stories of poor teaching and learning environments. They also voiced concern about the minimal lecturer interactions once students are clinically placed. Below are some of the quotations depicting a poor learning environment:

"I'm gonna stand there, I'm gonna wait for the job card, I'll register the patient because they are very fast in the room. You can't do the patient, finish and then you go and finish this site, so now we split ourselves, and say you go stand that site, I do this I pass, ja, that's very fast we also do admin stuff" FG2, P1

"Mhhh I think mhhh radiographers value time more than anything and as the student like you somehow need to adapt their pace of working and ehhh sometimes it doesn't correspond cause they are some of the things that you need to be taught how to perform and it usually takes some time to actually get to the best" FG2, P5

"because we constantly exposed to a qualified radiographers that aren't caring, we are not gonna know what it is to actually care. We have to see people caring for each other in order to feel like okay I want to do this as well" FG2, P2

"maybe lecturer should tell us about their experience when they were students and how they, what they did wrong and how they like corrected" FG2, P3

"I feel like, the clinical tutors are very important, we are the first, they are the first person that we look at and so their actions I feel like their actions depend, well, our actions, depend a lot on what their actions are, so if they are not caring towards patients if they don't do, because they are the first person to look at, we are thinking well everything that my tutor does I have to do because is my tutor and I've seen in a lot of department this tutors really don't even care about the students they don't care about doing the right things" FG2, P2

"Well a lot of radiographers…they tell me that I mean you do go through like hundred patients a day and you can't really be connected to each one of them" FG1, P3

"I think we have done may be about five role plays in total this whole year it should be a constant thing, every single day they should be not that I'm saying not every single day but they should be situation, here is a situation, here is your patient, talk to your patient. They should be a lot more role playing a lot more mock situations before we get into a real situation" FG1, P1

"It's like you have created a team environment…even within the 1st years it would really help…Like with Z and I he learnt lumbo and he came to me and he is like come lets do lumber together. I can show you how I did it and we then we like both and he taught me and my lumbar came out fine and I was like awesome" FG1, P3

"The people that I work with are mostly comm serve or second years so practically the same, first years and second years all the time you won't get…a qualified only come check your radiographs at the end of the day and check if it

is right or wrong most of the time I work with someone who is like me. Sometimes we don't know something we don't know it together, we do mistake and we do it together" FG3, P2

"I really don't wanna ask her cause she's never motivated to do it. She says, 'Where is the other students? Why can't they do it? Where is uhm…the other people in charge? Why can't they do it?' and sometimes it really is frustrating for me to every time go to a student" FG4, P4

"Mm hm…because ja, as he said the qualified (inaudible), they would be like uhm…They teach you these at school and things like that" FG4, P3

"Ja, they (clinical tutor) know how we feel. They know every year is the same people…or the same experienced people (laughs)…coming in and they're all like shy and don't know what to do…Ja. So, I think it would be better if we get to spend like a day with your clinical tutor or something" FG4, P4

"because on the first quarter we did mostly, I think it was only chest...and when you get there, you're doing chest and then somebody just comes out of the blue, they're like, 'Do that hand. Do what…' …and you're like, 'But, I don't know.' They will like, 'You will learn. This is how we all learn.' But you do not even know how the centering goes" FG4, P1

"so I think it really depends on your practice, ja cause I feel like our qualifieds were very nice and they were like they don't really scolds you, they just like okay this is what you did wrong or if you can see what you did wrong and they know they like, what did you do wrong and then how you gonna fix it and then just go do it again" FG1, P3

The profession of medical imaging plays a vital role in the overall healthcare system (Hussain, Salowa, Tedla, Saleh, Rizvi & Al-Rammah 2016:1374). Radiology examinations requested per year continue to increase but the shortage of radiographers continues. In order to overcome the shortage of radiographers, there has to be an increase in the recruitment and enrolment of student radiographers

(Mason 2006:438; Nightingale, McNamara & Posnett 2019). The clinical and academic training of student radiographers is crucial in the retention of students in the programme, but graduation rates for healthcare are lower than for other programmes (Mason 2006:439; Nightingale, McNamara & Posnett 2019).

Having a supportive learning environment is crucial for the learning process to occur. Simply being placed in the clinical environment is not sufficient for the development of professionals (Sandvik et al. 2014:286). Students need to have good relationships with their clinical supervisors. A good relationship will help students apply the knowledge they have and they will have the ability to better understand and apply concepts such as caring (Sandvik et al. 2014:286). Clinical supervisors need to be supportive of and welcoming to students. They should encourage students to become part of the team within the clinical environment (Sandvik et al. 2014:287).

An audit evaluation conducted in the UK in the early 2000's, of the clinical education for undergraduate radiographers revealed that students considered the clinical instructor's role to be very important (Price, Hopwood & Pearce 2000:158). This study identified the development of positive relationships within the clinical environment as being necessary for teaching and learning and should not be overlooked (Price et al. 2000:157). Despite this, a recent study conducted among radiography students in the UK, in 2015, revealed that students experienced unfriendly clinical staff (Hyde 2015:244). The findings from the 2015 study is similar to some of the stories shared by the participants in this current study.

3.5 THEME 3: BARRIERS AND ENABLERS TO THE DEVELOPMENT OF A CARING IDENTITY

Participants identified various barriers that influenced their ability to be a caring student radiographer. Barriers such as workload pressures, time constraints and poor role models hinder the development of a caring identity. However, participants also suggested numerous methods and ways to facilitate the development of a caring identity. This indicated a sincere willingness to learn and grow into a caring professional. Harnessing the student's potential and willingness is vital to the development of a caring professional.

3.5.1 The disconnect from humanity

The stories shared by the participants indicate a disconnect from humanity by qualified radiographers. Participants expressed feelings of frustration and disapproval of this behaviour. Some radiographers have developed a mentality of dehumanisation of patients. According to the participants, patients are often seen as a number or job card waiting to be imaged. Narratives shared by participants depicting a lack of the human element can be seen in the quotes below:

"personally even from the beginning of choosing this course it was, it feels to me like very cold sort of…sort of career path because I don't know if it is almost all medical mhhh…careers but it seems as though your patients becomes numbers rather than actual patients which becomes frustrating for me, which we have been working in the same department and it becomes incredibly busy and you tend to lose that these are actually human beings, they are just like call this patient, call that patient and you tend to lose that and that's not caring to me at all" FG1, P3

"as we still in the first year we still attached to the patient and everything but then as she said that as time goes by you tend to treat those patients as objects like as job cards you know what I mean so you might want to get things over and done with, you know what I mean so what I'm hoping to see myself is the way that I'm now I continue to be, I continue to be this way till the end" FG1, P2

"if you are patient yourself you wanna be treated with respect, you wanna be treated not just as a number you know, often in the hospital is always rushed and mhhh people are always when you queuing your patients is always like, okay just do this patient and get it done and over with" FG3, P5

Stories shared by the participants of this study are comparable to those in studies from other countries which suggest that there is a disconnect from humanity. Healthcare professionals generally focus on the examination at hand and refer to patients by the body part being imaged (Reeves & Decker 2012:79; Strudwick 2016:51; Tornroos & Ahonen 2014:110). This is evidence of the objectification of patients and healthcare workers distancing themselves from the patient. Some literature proposes this to be

a coping mechanism by professionals because they do not want to get too attached to the patient (Reeves & Decker 2012:79). This helps them deal with the job in front of them without getting too emotionally involved.

Moreover, a study in the UK reported that radiographers categorise their patients by body part in order to make decisions and work strategically (Strudwick 2016:51). This is based on the fact that diagnostic radiographers x-ray many trauma patients who are experiencing a lot of pain (Strudwick 2016:51; Reeves & Decker 2012:80). According to Tornroos and Ahonen (2014:110), technology has become such a major part of diagnostic radiography that the human element has been lost. Hence they question whether diagnostic radiography can be patient-centred.

While this disconnect may be seen as a form of coping, it cannot be denied that radiographers are working in an environment that is in constant contact with patients. These patients are human beings and are experiencing a number of different emotions and feelings. Ultimately, healthcare professionals should care for patients and address their concerns.

3.5.2 Identification and awareness of good and bad caring practices with a need for better role models

Interestingly, participants had the ability to distinguish good from bad caring practices even though they had spent minimal time in the clinical environment. This was encouraging to hear as many participants consciously made note that they did not want to be like the "bad" radiographers. Participants shared their personal experiences with certain qualified radiographers that made them choose who they wanted to be in the future. Examples of the behaviours that were witnessed and experienced are shared below:

"as we growing we learn through observational learning basically so I mean what we see is we can either gain from it or lose from it so you can decide whether you wanna implement what you see on your patient mhhh let's say a qualified is doing something and if you see that's good or bad and you can decide whether to take that for your own learning, do you know what I mean. So I feel that, I think is just with experience" FG3, P5

"When you are new, you tend to focus more on ehhh having that caring, yes and as you gradually mhhh grow older and being in that level of being an expert or something you tend to not to prove that you do caring, you do care" FG2, P5

"often mhhh if you have a patient there is obviously the patients queued behind you, thinking now okay this case is gonna take you know 20 minutes, I need to hurry up but I mean this is a patient I mean this is a person you know you should think of what you are doing in a moment, that's how I feel" FG3, P5

"what I have noticed when first year comes to the practice they behave very well they treat patients very well so I feel is something I need to go on doing…first year students they look up to their qualifieds, if the qualifieds is doing something wrong the student will copy that so if I stay doing right things the radiography professional will be perfect in the future" FG3, P4

"is like almost the students' responsibility to, when there is like, when everybody went home and everything there is still a patient needs to be done" FG2, P2

"I think ethics is a big thing if we can mhhh if we can just have mhh more emphasis in the department" FG2, P2

"you do this patient and you taking your time and then you've been very friendly and all that and then when you come out and there is like a lot of job cards now but then they come out and then is such a rush to get all this people done, mmm…and they like, cause they don't take their time to be friendly and attentive to the patients mhhh but now this is when it was quiet and they coming back and then is like a rush but even when the is not a rush there is only one job card lying there, they wanna do it as fast as possible" FG2, P4

"So, for them, even if you stay here you are in hospital, they are doing fast one minute they are done, they wanna go chill, they are on their phones like, no, is very…very bad" FG2, P1

"because I was slow, he came and takes over and now he just explaining again, okay I'm Mr so and so I'm gonna do this for you, that's really bad because I was gonna look like you are a fool, ja, so we should take our time they should understand that we are in a learning process and time is for everyone they should also take ahhh time into mind" FG2, P1

"I don't think a lot of radiographers should be a point of being radiographers…especially in a medical field or any career path perhaps, this field is you know, it is based around patients, so you have to be caring" FG1, P3

"Like literally, she's caring. She listens to the patients. She uhm…has so much sym…empathy…Mmm…with the patient. She's calm and she will do anything. So, I think in future I will also wanna be that calm person in some situations" FG4, P4

There was also consensus among participants that there is a need for more role models in the clinical environment who display caring attributes. Participants felt forced into following the actions of their senior and qualified radiographers. Despite acknowledging right and wrong caring practices, the participants felt torn between the two. This can be seen in the quotes below. The verbatim quotes below indicate the yearning for better role models by the participants:

"if we can mhhh look to the people that are teaches us and the people in the department, they actually cares about the patients because there are caring radiographers as well and if we can look at what they are doing and mhhh so that they can be our role models then so I think it will be also easier for us because we constantly exposed to a qualified radiographers that aren't caring, we are not gonna know what it is to actually care. We have to see people caring for each other in order to feel like okay I want to do this as well" FG2, P2

"I think as radiographers at the clinical department should realize that we see them as role models therefore their actions should be as you know as technically correct as you know as appropriate as possible for patient care,

because I don't think when they will realize that we are watching and picking up on things and maybe even learning what they do" FG1, P3

Professional socialisation is a process of developing from being a student to becoming a qualified professional through the acquisition of professional attributes (Gibbs & Kulig 2017:75). Students start to adapt to the profession and develop their own values and beliefs (Gibbs & Kulig 2017:75). This is a very critical time for students and therefore they need to be motivated by positive role models. Literature shows that students are easily capable of identifying good and bad caring practices (Phillips et al. 2015:407). This research study produced similar findings as participants mentioned specific actions they considered as not caring.

The participants regarded qualified radiographers as people they looked up to for developing a caring identity along with technical skills. The participants referred to the qualified radiographers as being role models. The term "role model" was coined by sociologist Robert Merton, who postulated that people undertake new identities or roles by comparing themselves to others (Gunderman & Houk 2017:230), for example student radiographers emulating the senior professionals. A role model can be anyone from the radiography educator to clinical tutors to qualified clinical radiographers. It is someone the students can turn to for support and aspire to be like one day. The study of Gibbs and Kulig (2017:75) revealed that student nurses surveyed regarded the clinical instructors as role models.

Student radiographers entering the clinical environment for the first time are very impressionable (Phillips et al 2015:403-408). They require good role models to guide them and teach them good working practices. The participants in this study identified what they considered to be good and bad working practices. Individuals who are considered role models need to understand their position. Gunderman and Houk (2017:230) state that role models do not simply teach formal skills but they also impart teachings about their working attitudes and professional attributes. Bandura's social learning theory (1969) indicates that through observation individuals not only learn from their role models, but they are also influenced by their actions and behaviours. Similarly, the participants in this study identified individuals that made an impact on them and that they wanted to emulate.

3.5.3 Workload pressures and time constraints

Workload pressures and limited time with patients are inevitable constraints to caring. Participants voiced feelings of frustration and disappointment. They felt that as student radiographers they needed more time to be able to perfect their patient interactions and technical skills. However, many of them explained that this was not the case at their training centres. They shared stories of being rushed and procedures being taken over due to time constraints. Examples of these stories are shared below:

"you do this patient and you taking your time and then you've been very friendly and all that and then when you come out and there is like a lot of job cards now but then they come out and then is such a rush to get all this people done, mmm…and they like, cause they don't take their time to be friendly and attentive to the patients mhhh but now this is when it was quiet and they coming back and then is like a rush but even when the is not a rush the is only one job card lying there, they wanna do it as fast as possible" FG2, P4

"there is a lot of patients and you just want to get work done but if like, if I know there is no one after me for the room or anything then I take my time and do everything properly but if there is a like a rush then, the lead apron are just like hanging there" FG2, P3

"Once they see the pile of job card or the see reception is full, they go crazy now they wanna do quick…quick" FG2, P1

"so often the radiographers will rush other radiographers that are busy to get the X-ray done over with so that they can bring other patients in, but at the same sense you wanna do your examination correctly you know, so that you don't wanna repeat the exposures" FG3, P5

"if you looking at time and working with time you must work with someone by the time you explaining to the patient what's going to happen you tell someone to fill in the information and everything" FG3, P3

"Sometimes people tell you 'I wanna use the room be fast' and you end up doing some mistakes" FG3, P4

"at public practices there is more patients in a day there is more patients and they are pressing time because there is departments, there is clinics, that's open and that, like that so you have to be more faster, much quicker" FG3, P2

"with public hospitals I feel like everyone from the doctors to the radiographers to the nurses everyone has so much pressure and that you feel like I can't take it this I just wanna get the things done" FG3, P1

Literature shows that patient waiting times have been given priority over the years (Hayre et al. 2016:248). Price et al (2000:157) developed an audit process evaluate the perceived performance of clinical education among first and second year radiography students. These authors conducted a study to "evaluate and monitor students' experience and satisfaction with the clinical education component of the course". One of the findings from their study was that increased workload pressure reduced the time for student involvement and this reduced students' satisfaction with the clinical environment (Price et al. 2000:157). Similarly in this study, most participants expressed feelings of being rushed to work quickly due to increased patient numbers. This forced participants to interact less with their patients, ultimately reducing their level of caring. Participants wanted time to perfect their skills but felt they were being disadvantaged by some qualified radiographers rushing them to use the room. Students see the clinical environment as a place for learning and growth (Sandvik et al. 2014:2886). Participants in this study spoke of being assigned administrative tasks because they were not "quick" enough to image patients.

Authors have questioned whether radiography can be truly patient/person-centred (Hayre et al. 2016:248; Moller 2016:309). Studies have shown that radiographers have developed a "hurried" and "rushed" approach to imaging patients due to increased workload pressures (Hayre et al. 2016:248). Image acquisition times have been reduced drastically with advanced technology, but this quicker approach can be viewed as a form of radiographers distancing themselves from the patients (Hayre et al. 2016:248). Patients' knowledge of healthcare has changed over time, with the

patients now desiring to be more involved in their medical treatment and planning (Moller 2016:309).

Sandvik et al. (2014:287) state that students welcome some form of independence with the knowledge that their supervisors are close by if needed. While students do fear making mistakes the participants of this study felt they made more mistakes when they were constantly rushed to complete examinations quickly. Increased workload continues to be a challenge, but it is important for qualified radiographers to understand the students' role in the clinical environment. Students are clinically placed to gain experience, learn and develop their skills while interacting with patients.

3.5.4 Feelings of professional pride and wanting to make a difference

On a very positive note, participants shared feelings of pride in the profession and the desire to help others. The aspiration of wanting to make a difference resonated among them. Below are some of the quotes from stories shared:

"I've even stayed half an hour after work…at the end of the day, I must say is not like mhhh we regret that because we go home and then you think to yourself like I've actually make a difference today, I feel so good about myself" FG2, P2

"Aa…well for me, I will carry on with the same ahhh not the same, the same speed I have not to rush, to do what is right. That's the, that's one of the ethical principles that say always do what is right. so once you rushing you start doing wrong things" FG2, P1

"By leaving a mark in whatever you are doing so that people can remember you" FG2, P1

"they make me feel more confident and they make me feel like I am actually making a difference rather than just being someone walking up and down and pressing a button" FG1, P4

"So I definitely focus on my work. I go there. This is my goal for today. Maybe…(laughs) caring. Just making one patient's day better" FG4, P2

According to Aristotle, pride is a moral virtue and striking a balance between too much and too little is referred to as the middle path (Sneltvedt & Bondas 2015:557). A study in Norway explored the concept of pride among newly qualified nurses. According to these nurses, pride is associated with doing the right thing (Sneltvedt & Bondas 2015:560). Taking pride in ensuring good nursing practice can be considered to be a virtuous behaviour. A part of good clinical practice is caring for patients. So it can be assumed that if an individual feels professional pride, they are more likely to demonstrate the attributes of a good caring professional. Similar findings were revealed in a study in Sweden which focused on pride and confidence in the workplace (Nilsson, Hertting, Petterson & Throrell 2005). Nilsson et al (2005) undertook a study in a Swedish University Hospital, using thematic open-ended interviews. Seventeen managers and key informants, representatives of the different groups of co-workers were interviewed. According to Nilsson et al. (2005), having pride in the work a person does can lead to higher levels of job satisfaction.

Even though the participants were first year students they displayed a sense of professional pride. This positive attitude is uplifting and very encouraging for bringing about change to the current working environment. These sentiments of wanting to make a difference are key to developing a caring identity. A study conducted in South Africa on the lived experiences of radiographers in Gauteng revealed that radiographers display a sense of professional pride (Britton, Pieterse & Lawrence 2017:30). Educators should harness this potential of students in order to develop caring professionals.

3.5.5 Willingness to learn and improved learning strategies

Participants expressed eagerness to learn and grow. They acknowledged wanting to be better caring radiographers. They communicated various creative teaching methods to incorporate caring. I was very impressed with their enthusiasm and interest in learning about caring.

Their comments showed a genuine interest in improving the level of caring given to patients in the clinical environment. This willingness shows great potential of the participants which can be channelled to achieve a good outcome.

"so I basically when I get to the point where I'm qualified I don't want to be that I'm just getting this done to get done. I want to keep that almost overly enthusiastic" FG1, P1

"go with the mindset that you learning even if you are qualified just put it in your head that you still learning" FG2, P3

"I think if we can at UJ if they can emphasize mhhh on what's a caring radiographer is, should be compassionate, to be like she said and to mhhh you know mhhh care about the patients to, if we can learn that here it would be most probably to mhhh able to do it" FG2, P2

"the evaluations that we do…if they see we don't care for the patients and they have to penalize us because that's the only way…so it like...one of the aspect that they are assessing us on, is caring for your patient, did you ask you patient mhhh how they are, did you mhhh assist your patient in moving from a chair to the bed, did you do this, did you do that and in this, we will obviously put more mhhh attention to that" FG2, P2

"The other thing is because caring isn't really mhhh is not the focus of this mhhh, is like we've got our different subjects, professional practice and so and so on…caring doesn't really go in there I mean Mrs K does teach us some of the stuff but there is no real way to evaluate us on it, is just definitions of stuff and I mean you just learn that you don't have to do it…I mean, ja, we need to find a more" FG2, P4

"if we can maybe do a reflective report just about mhhh just caring, just how because, I mean you gonna have to really think about it, you can't just do the report without thinking about, okay but am I really caring" FG2, P2

"So me I still want to be the caring person that I am now bubbly happy person that I am in the future as well not want change but maybe better myself, find ways you know" FG1, P2

"I think we need to get like just basic communication skills of not but not like the theory behind it as we did in professional practice we had this whole thing about communication…but we didn't actually do any of it we just wrote it down and like" FG1, P5

"if we talk amongst friends about what we've seen and observe. They like wow okay you can speak about your feelings and how you would have done something, I think in class they should be more discussion about what you've observed" FG1, P5

"Like a video, projected towards and then we as the students we just sit down and watch the video, what's happening there and everything and then after when we done we just write what we saw, what they did wrong, what was happening that was good and what did you notice. And that's where maybe our lecturers will see that or sometimes student think like this sometimes some think like this and that's where we start the work" FG2, P3

Participants in this study showed keen willingness to learn and improve their skills by suggesting strategies to teach caring. These strategies included reflective writing, simulation-based learning, peer discussions, sharing experiences and role playing. Bleiker, Knapp and Frampton (2011:235-240) developed a blended teaching approach to teach patient care to radiography students. The authors assembled various video interactions with ex-patients to give students a realistic understanding of the clinical environment. This method was mentioned by participants in this study and they acknowledged watching videos as being a better way of remembering information.

However, radiography educators are cautioned not to lose the human element of interaction with students. There should be a balance of e-learning and traditional methods (Bleiker et al. 2011:235-240). Similarly, Howlett, Vincent, Watson, Owens, Webb, Gainsborough, Fairclough, Taylor, Miles, Cohen and Vincent (2011:334-335) indicate that e-learning improves student satisfaction but should be combined with traditional teaching methods in order to be successful. Studies on online teaching reveal positive student feedback in terms of ability to choose when to work, good image quality and a good tool for revision (Howlett et al. 2011:337).

Peer assessments are a common evaluation tool. Literature indicates a mixed emotions response regarding peer evaluations. Elshami and Abdalla (2017:9-13) conducted a study to evaluate radiography students' perceptions of formative peer assessments. The overall finding was a positive one and many students had good experiences. Some students, however, did indicate the need to have senior students conducting the assessment to be a better method of receiving feedback (Elshami & Abdalla 2017:11). Participants of this current study suggested a similar scenario of using senior students to conduct assessments and making them immediately accountable for their non-caring actions.

Research on using simulation as a method of teaching has increased in recent years. Simulation-based learning provides students with a safe environment and allows them to easily transfer academic knowledge into clinical practice (Aura, Jordan, Saano, Tossavainen & Turunen 2016:229; Shanahan 2016:217-218). Shanahan (2016:217), describes simulation as a crucial tool for teaching clinical education. The participants of this study acknowledged a need for simulation-based learning to develop their caring behaviours. They also felt simulation of difficult patients would help them be better prepared for the reality of the clinical environment.

3.6 CONCLUSION

Engaging with the participants of this study allowed me to gain a realistic understanding of the reality of the academic and clinical environments. Their stories permitted me to acquire a meaningful understanding of the concept of caring among student diagnostic radiographers. In turn, this made me reflect on my own experiences as a diagnostic radiographer and allowed me to explore my own caring identity. The participants of this study displayed a sincere passion for helping and caring for others. This passion for interacting with people was what attracted them to radiography. Despite finding themselves in environments that did not fully support or promote caring behaviours, they still acknowledged wanting to be different.

I was undoubtedly impressed by their willingness and passion to make a difference and give back to society. Their willingness was clearly articulated by their suggested strategies and methods of teaching caring. It was evident from the findings that student diagnostic radiographers have the potential to grow and develop into caring

professionals, but they require help and assistance from their educators and the clinical team. I reflected on the poem below and I felt that I wanted to share it with the participants. My wish is that it will give them hope and that they will always try to remember to keep their flame of passion for radiography and caring alive:

See It Through
By Edgar Guest

When you're up against a trouble,
Meet it squarely, face to face;
Lift your chin and set your shoulders,
Plant your feet and take a brace.
When it's vain to try to dodge it,
Do the best that you can do;
You may fail, but you may conquer,
See it through!

Black may be the clouds about you
And your future may seem grim,
But don't let your nerve desert you;
Keep yourself in fighting trim.
If the worst is bound to happen,
Spite of all that you can do,
Running from it will not save you,
See it through!

Even hope may seem but futile,
When with troubles you're beset,
But remember you are facing
Just what other men have met.
You may fail, but fall still fighting;
Don't give up, whate'er you do;
Eyes front, head high to the finish.
See it through!

https://www.familyfriendpoems.com/poem/see-it-through-by-edgar-guest

CHAPTER 4

DEVELOPMENT OF A CONCEPTUAL FRAMEWORK FOR THE MODEL TO FACILITATE THE TEACH CARING
TO DIAGNOSTIC RADIOGRAPHY STUDENTS

"You must not lose faith in humanity.
Humanity is an ocean;
If a few drops of the ocean are dirty,
The ocean does not become dirty."
Mahatma Gandhi

This chapter is aimed at presenting to the reader a detailed description of the development of a conceptual framework for the model to facilitate the teaching of caring to first-year diagnostic radiography students. In chapter 3, the results from the AI focus group interviews were presented in the form of themes and categories. Those themes and categories have formed the basis for the development of the model that will be described in this chapter.

4.1 IDENTIFICATION OF A CENTRAL CONCEPT

In order to identify a central concept for the model development, I was required to reflect on the main themes that were presented in chapter 3. I used inductive reasoning to combine themes from specific stories that were shared with me to form a central concept that could be easily transferable to a broader diagnostic radiography population. To achieve this I depended on my reflective field notes that I wrote during the interview process. This allowed me to gain a meaningful understanding of the stories shared. I made sure that I was aware of my own experiences as a diagnostic radiographer and that my feelings did not influence the data. I focused on the stories shared by the participants and reflected on any underlying meaning gained from their stories.

The first theme that emerged from the transcribed data was caring as an integral part of a career choice. This theme focused on stories of an idealistic and altruistic nature. The participants had a keen sense of what caring meant to them and they conveyed that the need for helping others, through caring, was what made them choose

radiography. Like all humans, the participants also expressed professional appreciation as a motivator which boosted their self-confidence. Categories in altruism, the "little gestures" approach to caring, professional gratitude and patient interaction encompassed the stories told around this theme. My field notes recorded how enthusiastic and willing the participants were to share their stories. A passion for the profession of radiography resonated among them, providing optimism for a positive change in the future. Categories developed were very much in line with literature sources from nursing, radiography and other healthcare professions (Bolderston et al. 2010:199; Flynn 2016:29; Phillips et al. 2015:403-408; Watson Caring Science Institute 2018:3; McMaster & Degiobbi 2016:298).

The second theme focused on feelings of unpreparedness for daily interpersonal interactions. This theme revealed areas of the training programme that fell short in the teaching of caring and made participants feel at a disadvantage in their interactions with patients and colleagues. A lack of a proper support structure to help students to be caring to different patient types and in different situations left participants feeling emotionally lost and desperate. The importance of the role of the clinical tutor in helping students to be caring and to care for other students was greatly emphasised by the participants. A key point was the differences in the reality of the clinical environment in relation to the academic training. This recognisable difference made participants question their readiness for interpersonal interactions (Sandvik et al. 2014:286; Carvalho et al. 2018:35; Alconero-Camarero et al. 2018:94; Hussain et al. 2016:1374).

The last theme centred on the barriers and enablers to the development of a caring identity (Reeves & Decker 2012:79; Strudwick 2016:51; Tornroos & Ahonen 2014:110). Professional socialisation is critical in ensuring the successful training of students to become caring professionals in a clinical environment (Gibbs & Kulig 2017:75). Participants' acknowledgement of the need for better role models links very closely with the elements of professional socialisation. My reflective field notes describe how positive the participants were in suggesting methods and strategies to achieve the ideal caring professional. Their ideas were creative and innovative. The stories shared around this theme were encouraging and instilled hope for the potential to bring about change.

The definition of caring was reviewed in conjunction with the above themes in order to conceptualise caring in this study:

Caring is defined as an altruistic act of concern, compassion and empathy towards another individual without any discrimination. This can be demonstrated by human acknowledgement, genuine interest and respect (Bolderston et al. 2010:198; Flynn 2016:29).

In Denmark, radiography is explained as a combination of technology and human knowledge in a manner that places the patient at the centre of any examination (Moller 2016:310). This definition provides a clear indication of the importance of human acknowledgement during radiological examinations. Similarly, Canadian radiation therapists describe caring as focusing on the patient as a person and addressing their individual needs (Bolderston et al. 2010:201). Moller (2016:312) performed a qualitative study in Denmark among patients and radiographers working in Magnetic resonance imaging (MRI) to gain an understanding of patient centred radiography. Radiographers working in MRI expressed that showing interest in the patient from the very beginning stages of the examination is important in order to get to know the patient better and to be able to connect with them (Moller 2016:312).

Patient interaction within the context of diagnostic radiography is described as a transient encounter due to the limited time spent with patients (Bleiker et al. 2016:257). However, compassionate care can still be achieved by the "small gestures" and the "power of touch" (Bleiker et al. 2016:258; Hayre et al. 2016:245). A display of empathy can be reassuring to patients and in theory empathy allows a radiographer to connect with their patients (Bleiker et al. 2016:258). Patients visiting a diagnostic radiography department are usually experiencing some form of pain or emotional distress; Björkman et al. (2016:71) therefore emphasise the importance of communication in radiography as a method of caring to ensure cooperation and a good patient experience.

Upon reflection of the definition of caring, I realised that the best way to produce caring radiographers is by creating and maintaining a culture of caring among diagnostic radiography students. The concept of culture in professionals, organisations and

academic institutions has evolved over the years (Hall 2005:188; Gillin et al. 2017:5218). Organisational culture has numerous definitions but the definition presented by Schein is comprehensive. Schein (1984:3) states that "organisational culture is the pattern of basic assumptions that a given group has invented, discovered or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems".

In my study, the concept of an organisation can be represented by a radiology department. For a radiology department to function effectively, it relies on the professionals that make up the organisation. Professionals may be required to follow and adapt to the organisation's culture or they may possess their own culture that they bring to the organisation. This can be referred to as professional culture. The professional in my study is the diagnostic radiographer. Professional culture can be described as values, beliefs, customs and behaviours within the different healthcare professions (Hall 2005:188). This culture is then passed on from the senior individuals to the more junior members of staff who are starting their careers (Hall 2005:188). Professionals may keep this culture as they move from one work environment to another.

The notion of culture is well articulated within the contexts of organisations and among professionals. Based on these understandings of the term, I decided to adopt the concept of culture for my study. Within the context of my study and for the purposes of teaching caring, I felt that a culture of caring among student radiographers was key to the development of caring professionals.

Culture development allows for the sharing of knowledge and values grounded in both theory and evidence which will in turn provide guidance for sincere caring practices (Glembocki & Dunn 2010:566). The Francis report in the UK draws special attention to creating a culture of caring to improve the delivery of compassionate care in nursing (Gillin et al. 2017:5217). In a caring culture, staff feel appreciated and patients receive care that is person-centred (Sanders & Shaw 2015:1; Richards 2016:152). Therefore

the facilitation of a culture of caring became the central concept for the development of a model to facilitate the teaching of caring to diagnostic radiography students.

4.2 CONCEPT DEFINITION AND CLASSIFICATION

The central concepts of facilitation, culture and caring were then defined by means of dictionary and subject literature. The rules developed by Copi and Cohen (1994:192-196) for well-formulated definitions were used. Walker and Avant's method of concept analysis was applied in the concept analysis process. The attributes of the concepts and their relationships are illustrated in the definitions.

In order to demonstrate the essential attributes that were identified for the central concepts, a model case and contrary case were created. This allowed me to gain additional meaning and understanding from the concept of facilitation of a culture of caring from a diagnostic radiographer's perspective.

4.2.1 Dictionary definitions of facilitation

Dictionary sources were used to explore the term "facilitation". The definitions that were found are presented in table 4.1 below.

Table 4.1: Dictionary definitions of facilitation

Definition of facilitation	Source
➤ the act of **helping** other people to deal with a process or reach an agreement or solution without getting directly involved in the process, discussion, etc. yourself	Cambridge Dictionary (n.d.)
➤ the act of facilitating	Merriam-Webster (n.d.)
➤ the action of facilitating something	Oxford Dictionaries (n.d.)
➤ act of assisting or **making easier** the progress or improvement of something	Definitions.net (n.d.)
➤ act of assisting or **making easier** the progress or improvement of something	Vocabulary.com (n.d.)
➤ the act of making something **easier** or making something happen	Your Dictionary (n.d.)
➤ the condition of being made **easy** (or easier)	Webster Dictionary (n.d.)

4.2.2 Subject definitions of facilitation

Literature sources in healthcare and radiography were searched to identify definitions of the term "facilitation". The results are presented in table 4.2 below.

Table 4.2: Subject definitions of facilitation

Definition of facilitation	Source
Facilitation is a technique where an individual makes things **easier** for others, by **providing support to help** them change their ways of thinking and working.	Cranley, Cummings, Profetto-McGrath, Toth and Estabrooks (2018)
The concept facilitation refers to the type of **support** practitioners need to change their attitudes, habits, skills, thinking and working ways.	Heynes, Botma and Van Rensburg (2017:106)
Facilitation refers to the **process of enabling** (making easier) the implementation of evidence into practice.	Harvey, Loftus-Hills, Rycroft-Malone, Titchen, Kitson, McCormack and Seers (2002:579)
Facilitation is presented as a technique whereby facilitators **provide support to help** individuals and groups realize what they need to change and how to make changes to incorporate evidence into practice.	Dogherty, Harrison and Graham (2010:77)
A definition of facilitation is that it is a **process** of identifying, and providing, suitable resources which will help the learning process.	Scholtz (2005:14)

From the definitions provided by subject literature and dictionary sources, I identified what I considered to be essential attributes for the concept of facilitation. The essential attributes are listed in table 4.3 below.

Table 4.3: Essential attributes for facilitation

Concept	Essential attributes
Facilitation	Process
	Make easier
	Providing support to help

4.2.3 Dictionary definitions of culture

Dictionary sources were used to explore the term "culture". The definitions that were found are presented in table 4.4 below.

Table 4.4: Dictionary definitions of culture

Definition of culture	Source
➢ the **set of shared** attitudes, **values,** goals, and practices that characterizes an institution or organization	Merriam-Webster (n.d.)
➢ the way of life, especially the general customs and **beliefs,** of a particular group of people at a particular time	Cambridge Dictionary (n.d.)
➢ the behaviours and **beliefs** characteristic of a particular social, ethnic, or age group	Dictionary.com (n.d.)
➢ the **ideas,** customs, and social behaviour of a particular people or society	Oxford Dictionaries (n.d.)
➢ the culture of a particular organization or group consists of the habits of the people in it and the way they generally behave	Collins Dictionary (n.d.)
➢ a **set of ideas, beliefs,** and ways of behaving of a particular organization or group of people	Macmillan Dictionary (n.d.)
➢ the attitudes and **beliefs** about something that are **shared** by a particular group of people or in a particular organization	Ldoceonline (n.d.)
➢ the **set** of predominating attitudes and behavior that characterize a group or organization	The Free Dictionary (n.d.)

4.2.4 Subject definitions of culture

Literature sources in healthcare and radiography were searched to identify definitions of the term "culture". The results are presented in table 4.5 below.

Table 4.5: Subject definitions of culture

Definition of culture	Source
The total range of activities and ideas of a group of people with **shared** traditions, which are t**ransmitted** and reinforced by members of the group.	Ploussi and Efstathopoulos (2016:143)
Cultural elements are defined as **learned** solutions to problems.	Schein (1984:8)
Culture refers to **learned**, **shared, and transmitted** values, beliefs, norms, and life ways of a specific individual or group that guide their thinking, decisions, actions, and patterned ways of living.	Leininger (2001:46-47)
Richerson and Boyd describe culture as "information capable of affecting individuals' behaviour that they **acquire** from other members of their species through **teaching,** imitation, and other forms of social learning".	Driscoll (2016:43)
Culture shapes a person's **belief and values** systems.	Drayton and Weston (2015:20)
Culture is an evolved constellation of loosely organized **ideas** and practices that are **shared** (albeit imperfectly) among a collection of interdependent individuals and **transmitted** across generations for the purpose of coordinating individual goal pursuits in collective living.	Chiu, Gelfand, Yamagishi, Shteynberg and Wan (2010:482)
The term culture refers to a relatively **stable set of beliefs, values** and behaviors commonly held by a society.	Ilies and Gavrea (2008:322)
…a system of knowledge or as templates **learned** through perceptions, **beliefs,** and evaluations that allow individuals to act in a manner acceptable to other members of the group or with other members of other groups.	Bitsani (2013:49)

From the definitions provided by subject literature and dictionary sources, I identified what I considered to be essential attributes for the concept of culture. The essential attributes are listed in table 4.6 below.

Table 4.6: Essential attributes for culture

Concept	Essential attributes
Culture	Set of shared ideas, beliefs and values
	Learned and transmitted

4.2.5 Dictionary definitions of caring

Dictionary sources were used to explore the term "caring". The definitions that were found are presented in table 4.7 below.

Table 4.7: Dictionary definitions of caring

Definition of caring	Source
displaying **kindness** and concern **for others**	Oxford Dictionaries (n.d.)
a caring person is **kind** and gives emotional support t**o others**	Cambridge Dictionary (n.d.)
feeling and exhibiting concern and empathy for others	The Free Dictionary (n.d.)
someone or something that shows **kindness** and concern for others	Your Dictionary (n.d.)
kind, helpful, and sympathetic **towards other people**	Macmillan Dictionary (n.d.)
If someone is caring, they are affectionate, helpful, and sympathetic.	Collins Dictionary (n.d.)
feeling or showing concern for other people	Learners Dictionary (n.d.)
Caring is the **kindness** or love you have **towards another individual.**	Vocabulary.com (n.d.)

4.2.6 Subject definitions of caring

Literature sources in healthcare and radiography were searched to identify definitions of the term "caring". The results are presented in table 4.8 below.

Table 4.8: Subject definitions of caring

Definition of caring	Source
Caring encompasses many qualities such as **compassion, kindness,** thoughtfulness, gentleness, consideration, concern, empathy, sympathy and love.	Flynn (2016)
The caring perspective is an emotional concept that stresses feelings of concern and **relationships between nurses and care recipients** that inspire and motivate caring practice.	Gustafsson, Asp and Fagerberg (2009)
Caring is perceived as **human behaviour** that includes cognitive, affective, psychomotor and administrative skills within which professional caring may be expressed.	Wilkin (2003)
Loving caring refers to unselfishness and therefore also to altruism.	Paldanius and Määttä (2011)
Caring is not simply about being physically present in the same room as the patient, but it is about being able to understand the verbal and non-verbal communication signs from the patient.	Ousey and Johnson (2007)
Caring is based on shared meanings **between nurse and patient.**	Lovering (2008)
Humanistic way of interacting with patients that demonstrates sincere care and concern for patients simply because they are human beings	Paulson (2004)

From the definitions provided by subject literature and dictionary sources, I identified what I considered to be essential attributes for the concept of caring. The essential attributes are listed in table 4.9 below.

Table 4.9: Essential attributes for caring

Concept	Essential attributes
Caring	Kindness and compassion
	Selfless concern
	Humanistic behaviour
	Interaction between two people

After reviewing the dictionary and subject definitions as well as reviewing the essential attributes for the central concepts, a conceptual definition was created. Therefore, the facilitation of a culture of caring as an integral part of teaching caring refers to **providing support to help** student radiographers develop a **humanistic behaviour** of **selfless concern, kindness and compassion** towards another individual which conceptualises the attributes of a caring professional. It is a **process** of **making easier** the **interaction between two people** by developing a **set of shared ideas, beliefs and values** of caring that can be **learned and transmitted** to other radiographers.

4.3 CREATING CONCEPTUAL MEANING FOR THE CONCEPT OF FACILITATION OF A CULTURE OF CARING

A model case was created to demonstrate the experience of the central concept, that is, facilitating a culture of caring as an integral part of teaching caring to diagnostic radiography students. A contrary case was also created to demonstrate the attributes not associated with the central concept (Chinn & Kramer 2011:166-170).

The model case was developed from my vision of a radiographer who displays attributes of a caring nature. The contrary case was developed based on the stories shared by the participants of this study.

4.3.1 A model case

Kate is a 32-year-old senior radiographer who is currently working in a provincial academic hospital. In this hospital student radiographers engage in their WIL hours. This story is based on Kate.

> As a senior radiographer, I am expected to be knowledgeable in all areas of diagnostic radiography. In order to be familiar with the different equipment and procedures, I rotate through the various departments within the X-ray division. Based on this, I find myself working with different patient types, both trauma and medical conditions. All of this requires me to be effective and efficient in the services I provide to them. From early in my career, when I was still a student radiographer, my educators gave me the necessary **support** I needed to **help** me develop a **humanistic behaviour** of interacting with patients. Based on that teaching, I have now developed my own caring identity which allows me to **easily** interact with patients in a **selfless, kind and compassionate** manner.
>
> I greet all my patients with a smile and never fail to ask them how they are feeling. This always seems to make them feel better. Due to the time constraints in the X-ray department, I often allow my patients to talk and share their thoughts while I continue to position them. In this way I am able to listen to them without delaying the other patients waiting. I feel these little gestures of greeting my patients in a friendly manner, asking how they are feeling and by simply listening to them are the way I show my patients I am **concerned** and I care about them.
>
> The X-ray department is always busy but I never find myself rushing out of work at the end of the day. If a patient needs help, I usually assist them before handing over to the radiographer on the next shift. I always think about the **patient first** and what they and their families are going through. Those few minutes that I take to help someone, I know I am making a difference even if it is just a small one.

I fully understand that patients are in a lot of pain and usually they are quite anxious and uneasy about the radiology procedure. Because of that they may seem rude or angry. Irrespective of their attitude or behaviour towards me, I treat all my patients the same. This I **learnt** during my academic training. My educators instilled in me a **set of ideas, beliefs and values** on how to **interact** with many different types of patients. These ideas and values **helped** me to develop a positive **behaviour** towards other individuals. By the end of my training I had developed my own caring identity which has become a part of me and I have not lost since. Student radiographers in the X-ray department often come to me for **help** and to assist them with patients as they find me to be very approachable. I also **share** these **values** with them and I see many students **adopting my behaviour** for interacting with patients. Each time I see this I am encouraged to continue **sharing my values** and this helps me to maintain this caring behaviour that I have developed.

This job has really fulfilled my expectations and each day I leave work knowing I have done something good. I love the **patient interaction** and caring for my patients. When my patients say "thank you", I feel that is all the reward I need for this job. I know this is only the beginning but I feel I have the **necessary skills** from my training to ensure that I will keep growing and becoming a better caring radiographer. I have a passion for radiography and this keeps me going.

4.3.2 A contrary case

Clare is a 40-year-old diagnostic radiographer. She has her basic qualification in radiography and has never furthered her studies to improve her qualification. This is the story based on her life.

I work in the casualty X-ray department which is always busy with many trauma patients. When I started working in this department I was very keen and eager to be a part of the trauma team, working closely with the doctors and nurses. The reality of the clinical environment has crushed my expectations. I feel my training did not fully prepare me for this. The

department is so busy that I find myself **rushing** through the **patient numbers** and trying my best to X-ray as many **patient job cards** as possible during my shift. There is no time to **interact with patients or other staff members**. When you get to the trauma unit, the doctors and nurses are all busy, no one has the time to greet or interact with you. You are just there to do a job and leave. The patients just lie on the table like an **object** and many different healthcare professionals talk about the patient like he/she has **no feelings**. When I started this job I used to be so **discouraged** by this behaviour but I have found myself adopting a similar attitude. I am not proud of this but I feel I have no other choice.

When it is very busy, I usually take a few patients at once and speak to them together and then start X-raying one after the other to save time. I feel frustrated when patients want to talk to me and share their stories because I do not have the time to listen to them. At times **I feel like a robot** with **no feelings** and I am **working in a factory** trying to push through the workload. When I started I used to smile and greet all patients, now I **don't even realise they are humans**, I just see **the body part needing an X-ray**. I just wait for the end of my shift so that I can get away from this job.

There are student radiographers that train in my hospital but **I do not have the time to help or teach** them. I sometimes feel they are in my way and I prefer working alone because they are **not quick** enough. When I was a student it was exactly the same – no one was willing to teach me. When prospective students come to the hospital I **discourage** them from studying this course. This profession is very cold, there is **no time to be kind or interact** with people. Even my colleagues are the same, everyone is in a hurry. I just go to work for the sake of earning a salary.

4.4 CLASSIFICATION OF CONCEPTS

The survey list developed by Dickoff et al. (1968:422-435) was used as a method to classify concepts as part of creating a conceptual framework that is required in theory generation. Chinn and Kramer (2011:45) explain the survey list as "recognition and naming of the values toward which theory development was proceeding". This

requires setting a goal in order to develop a guide for achieving this goal. Therefore the survey list by Dickoff et al. (1968) was used to classify the concepts that were used in the development of the model to facilitate the teaching of caring as a part of producing caring radiographers. The categories are the agent, the recipient, the context, the dynamics, the process and the terminus (Chinn & Kramer 2012:45).

➢ The agent in this model is the radiography educator. The radiography educator will be able to facilitate the student diagnostic radiographer's journey towards the development of a caring professional.

➢ The recipient in this model is a first-year student diagnostic radiographer who is unable to achieve a professional caring identity.

➢ The context of this model is a medical imaging and radiation sciences department at a higher education institution in South Africa.

➢ The dynamics of this model and the reason for introducing change were clearly articulated by the participants of this study. The participants spoke about being in an environment that does not fully teach or support the development of a caring professional. They indicated a need for better role models in the clinical environments. They found themselves faced with difficult patient situations which made them feel unprepared for their daily interpersonal interactions. Patients are simply being objectified and not treated like humans. Radiographers are expected to be caring professionals but the current curriculum focuses on the technical aspects of the profession and fails to teach radiographers how to be caring.

➢ The process involves giving student diagnostic radiographers an opportunity to grow as professionals. It is a process that will help first-year student diagnostic radiographers to develop a culture of caring that will provide them with a set of shared ideas and values that will guide them as a group. The facilitation of a humanistic way of interacting with individuals and the creation of a supportive

environment that teaches and promotes the development of selfless concern, kindness and compassion towards another individual will help first-year diagnostic radiography students to develop into caring professionals.

➢ The terminus of this model is a caring radiographer who models a culture of caring.

4.5 DEVELOPMENT OF RELATIONSHIP STATEMENTS

The categorised concepts in 4.4 were then written into the relationship statements below.

➢ The goal of the radiography educator is to facilitate the development of radiography students who will become caring professionals.

➢ Within the context of diagnostic radiography, the current undergraduate curriculum teaches students how to undertake patient care but does not teach them how to be caring professionals. The challenge is to develop a culture of caring among student radiographers which will allow them to develop into caring professionals.

➢ The radiography educator presents the radiography student with an opportunity to develop a humanistic behaviour of selfless concern, kindness and compassion towards another individual.

➢ The radiography educator provides the necessary assistance and guidance to the radiography student by facilitating the development of a culture of caring.

➢ The radiography student will embrace and implement the values and skills they are taught within this culture of caring.

➢ The development of a culture of caring will lead to the development of radiography students who will become caring professionals. A caring radiographer will be able to share and transmit their set of learned values to

other radiographers and students. This may ultimately result in the promotion of a patient-centred approach to caring within diagnostic radiography.

The concepts were linked to create a conceptual map which is depicted in figure 4.1 below.
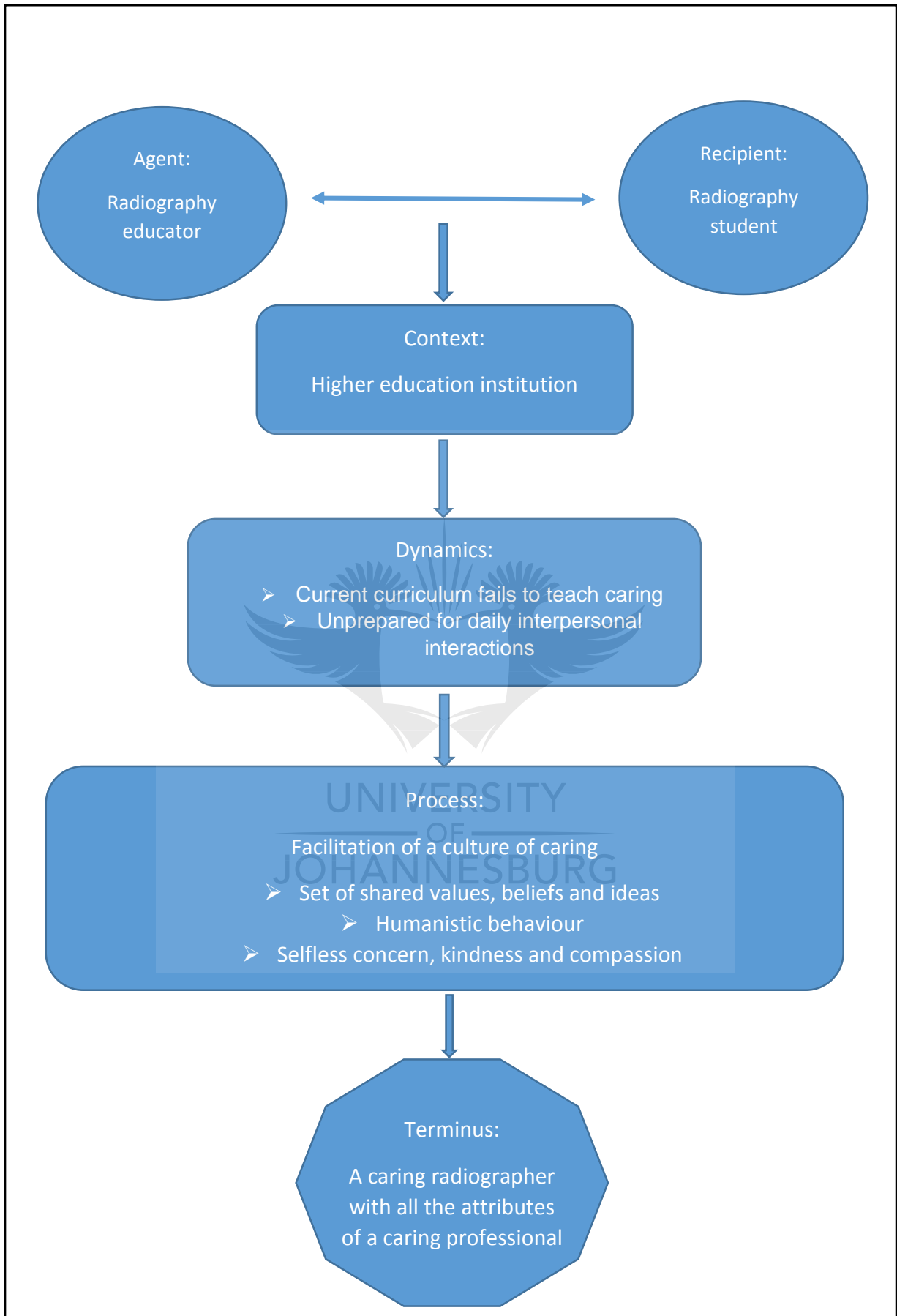
Figure 4.1: Conceptual map

4.6 CONCLUSION

In this chapter the conceptual framework for the model created for this study was presented. A conceptual definition was developed and central and related concepts were identified and defined. Essential attributes were identified. Relationship statements and a conceptual map were developed. This conceptual framework was in keeping with creating a new theory for the profession of diagnostic radiography. I had to ensure that I was providing a true reflection of my participants' stories and experiences.

The poem below by Frederick J.B. Moore II speaks about change. This poem, to me, reflects the passion and determination shown by the participants of this study. I believe they have what it takes to bring about change. I would like to share this poem with the reader.

Changing the world
is a near impossible task

because no man is ever willing to truly change
but if you're crazy enough to try
then someone will follow

you don't have to be perfect,
to change the world.
All you need is an idea worth following.
An idea willing to share.

When your looking to change the world
your heart has to be into it
you can't half step what you do
or everything will fall apart

change, my friends,
is a great weapon
one that everyone fears
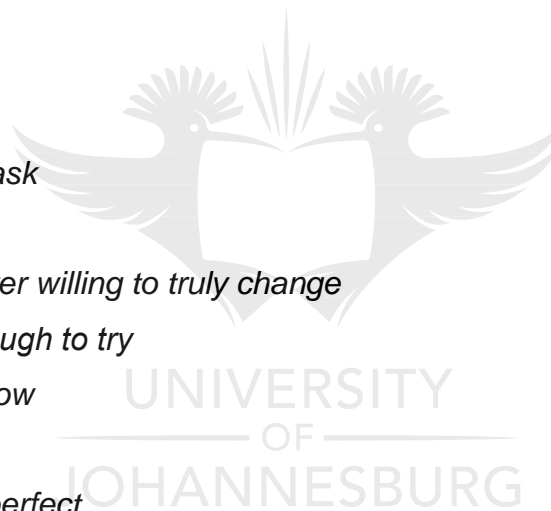
beware that not everyone

will change with you

they are the lost ones

to change the world

you must be wise enough

to speak of peace

and surrender for your cause

to change the world

you must be wise enough

to hold your tongue

and bare your arms

change will mean persecution

because all men fear

what is new and not understood

to change the world

you need a foundation behind you

that will encourage you to keep pushing the world

when your broken and exhausted

to change the world

your first step must be yourself.

You are the greatest catalyst for change

and the greatest change to tradition

Frederick J.B. Moore II

CHAPTER 5

DESCRIPTION OF THE MODEL TO FACILITATE THE TEACHING OF CARING AS PART OF A CULTURE OF CARING FOR DIAGNOSTIC RADIOGRAPHY STUDENTS

The secret of change

Is to focus

All of your energy

Not on fighting the old

But on building the new

SOCRATES

5.1 INTRODUCTION

A description of the model to facilitate the teaching of caring to diagnostic radiography students will be provided. The central concept of the facilitation of a culture of caring was established and conceptually outlined in the previous chapter. Literature and dictionary resources were consulted to develop essential attributes for the central concepts. In this chapter, the essential attributes are defined as a component to the description of the model.

Chinn and Kramer's process (2011:154-205) for empirical theory development will be used to describe the model. Guidelines to operationalise the model as well as an evaluation of the model will also be presented.

5.2 OVERVIEW OF THE MODEL

Figure 5.1 illustrates a model to facilitate the teaching of caring to diagnostic radiography students. An overview of the model will be provided for the reader. The conceptual map displayed in figure 4.1 was integrated into the model.
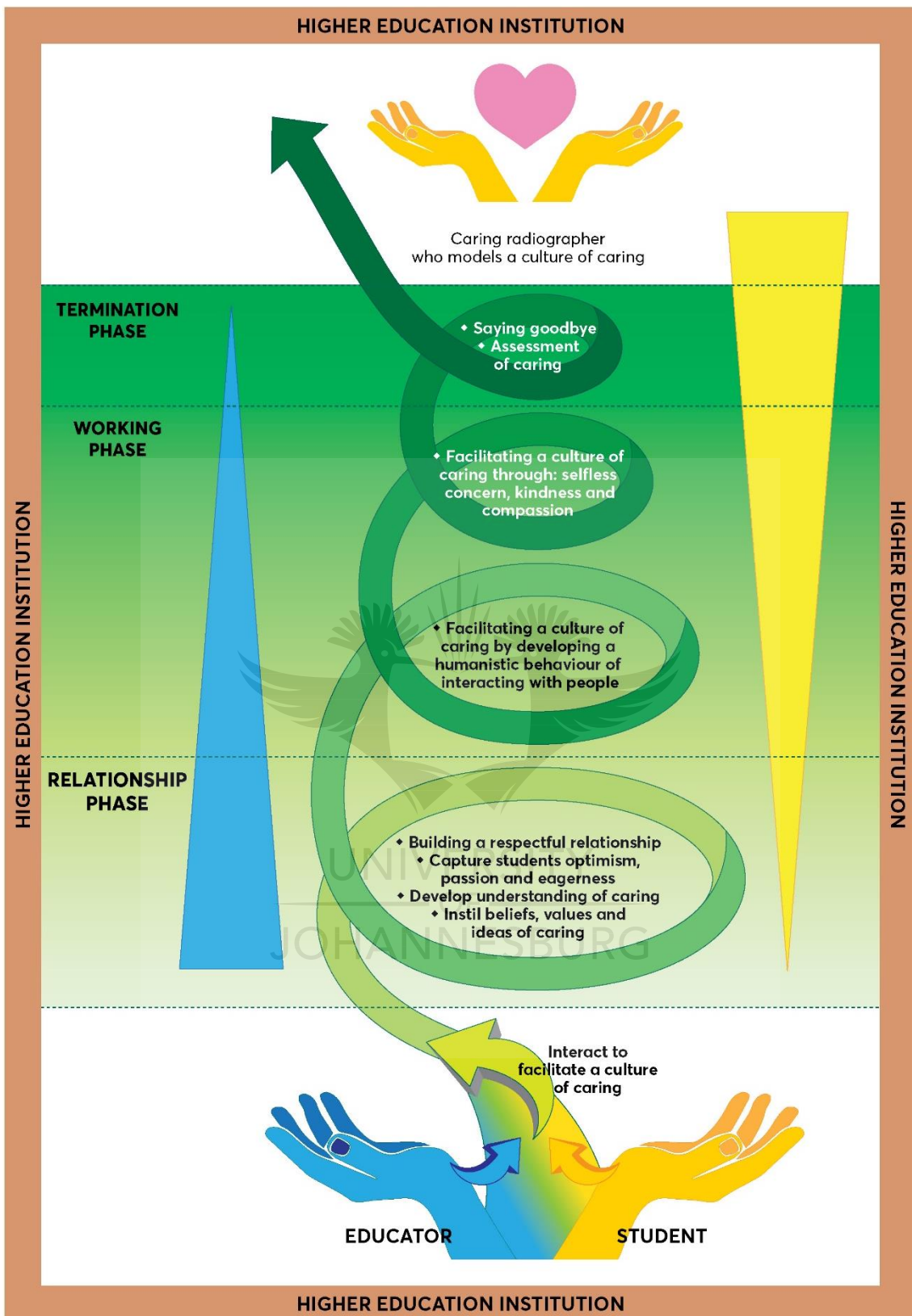
Figure 5.1: Model to facilitate the teaching of caring to first-year diagnostic radiography students

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Despite an attempt to move towards a more patient-centred caring and compassionate healthcare environment, there is still evidence to suggest that many healthcare professionals do not demonstrate adequate caring attributes and behaviours towards their patients and other staff members. Within the context of diagnostic radiography, an environment that centres on interpersonal interactions, it is concerning to think that student radiographers may not be adequately supported or provided with the tools necessary to be caring professionals. Upon reflection of the current undergraduate curriculum, it was evident that there was a need to revise the existing modules to incorporate the teaching of a culture of caring. To match the optimistic and passionate nature of first-year students (Phillips et al 2015: 403-408), I decided to take an affirmative outlook on this research study by providing student radiographers with the opportunity to focus on the positive qualities of diagnostic radiography rather than simply concentrating on the negative.

In chapter 3, the results from the AI interviews were presented and supported by literature. Minimal studies have been conducted on the concept of caring in diagnostic radiography and there are no studies which explored the concept of caring from a first-year diagnostic radiography student's perspective and understanding. Other healthcare professions such as nursing and medicine have conducted numerous studies on the concept of caring. These research studies were consulted and their findings supported the results of this study. Stemming from the results of the AI interviews, there was a clear indication that diagnostic radiography students have an idealistic and altruistic understanding of caring. They are driven by the need to help and care for others, but they find themselves in an academic environment that does not fully prepare them for the reality of caring within the clinical environment and a clinical environment that does not promote the development of a caring identity.

This research model therefore provides a possible platform for radiography educators to be able to harness the potential of first-year students. The educators will be able to provide students with the support they require in order to develop a humanistic behaviour of interacting with people. Additionally, students will be given an opportunity to develop a set of shared values, beliefs and ideas that they can learn and transmit to others. Ultimately, the goal is for diagnostic radiography students to complete their academic training and graduate as caring professionals who model a culture of caring.

The context of the model is a higher education institution that teaches diagnostic radiography. The process of the model will be described in three phases: relationship phase, working phase and termination phase. Detailed descriptions of the definitions and strategies to be used during the working phase of the model are provided.

5.3 DESCRIPTION OF THE MODEL

A description of the model is provided according to the following concepts:

- ➢ The purpose of the model
- ➢ The theoretical assumptions of the model
- ➢ The context of the model
- ➢ Theoretical definitions of the model concepts
- ➢ Relationship statements
- ➢ The structure of the model
- ➢ The model process

5.3.1 Purpose of the model

All change is hard at first,
Messy in the middle,
And so gorgeous at the end
Robin Sharma

The purpose of this model is to provide a framework of reference for diagnostic radiography educators and students to begin a learning journey together that will enable the development of a culture of caring among diagnostic radiography students. This will result in the development of a caring professional who models this culture of caring. The model will help educators to cultivate the optimistic nature of students and enhance their idealistic and altruistic understanding of caring. It will allow educators to adequately prepare students for the reality of caring within the clinical environment. By facilitating a culture of caring as a way of teaching caring to students, this model provides a context in which the concept of caring becomes significant for radiography education and the profession of diagnostic radiography.

It is essential for diagnostic radiographers to be caring professionals due to their daily interactions with different types of patients. Developing the attributes of a caring professional by creating a culture of caring among student diagnostic radiographers will enable students to provide a more effective and compassionate radiography service to patients. A lack of caring can result in some diagnostic radiographer simply objectifying patients and displaying a disconnect from humanity (Reeves & Decker 2012:79). This can make patients feel very dissatisfied with the radiology procedure and as a result, they may not fully co-operate, which can cause a hindrance to their medical diagnosis and treatment. An assumption can be made that if diagnostic radiographers were caring professionals, they would be able to provide patients with both patient-centred caring and technically appropriate radiological examinations.

In summary, this model is aimed at providing a theoretical framework of reference to facilitate a culture of caring as part of teaching caring to diagnostic radiography students. It is anticipated that the model will give guidance to diagnostic radiography educators in equipping students with the skills necessary for them to be consciously caring professionals. The process of this model is in keeping with a social constructivist teaching philosophy and aligned with the amended version of Miller's pyramid, which supports incorporating skills and attributes of professional behaviour into the identity of the professional (Cruess, Cruess & Steinert 2016; Suhendi & Purwarno 2018:92). Ultimately, the purpose of this model is to be a proactive approach to developing caring radiographers who model the essential attributes of caring through a culture of caring, which will become part of the students' professional identity.

5.3.2 Theoretical assumptions of the model

The theoretical assumptions of this model were established on the assumptions offered by the theory of health promotion in nursing (University of Johannesburg 2010:4).

The first assumption of the theory is that "the person is seen holistically in interaction with the environment in an integrated manner". For this study, the first assumption of this model is:

The student diagnostic radiographer is seen as a whole and interacts with both their internal and external environment in an integrated manner. It is therefore assumed that the person cannot be viewed in isolation without taking into consideration their environment.

The next assumption of the theory is that "the environment includes an internal and external environment. The internal environment consists of the body, mind and spirit dimensions. The external environment consists of physical, social and spiritual dimensions". In the context of this model, the student diagnostic radiographer consists of an internal environment of the body (anatomical and physiological processes), mind and spirit. The physical external environment of the student diagnostic radiographer consists of two parts: the higher education institution where the academic training takes place and the clinical institutions where WIL takes place. The social external environment will consist of the interpersonal relationships of a multidisciplinary team within both physical environments. The student's spiritual environment is guided by a number of factors such as personal beliefs, social values, ethical considerations and culture. This spiritual environment will assist in guiding them to becoming caring professionals. The assumption of this model is:

By creating a culture of caring among student radiographers, we will be allowing students to construct a set of values and beliefs, which will assist them in developing their own personal and professional caring identity. By allowing them to construct these skills to develop their caring identity, we are able to change their internal environment. This change in the internal environment will then transform the students' external environment and allow them to become caring professionals who model a culture of caring.

Another assumption of the theory is that "the nurse/midwife is a sensitive, therapeutic professional who demonstrates knowledge, skills and values to facilitate the promotion of health". In this model the agent is the diagnostic radiography educator, and therefore the assumption in this model is:

The diagnostic radiography educator is a professional who demonstrates knowledge, skills and values required to facilitate a culture of caring among students in order to teach students how to become caring professionals.

The next assumption of the theory is that "health is an interactive, dynamic process in the patient's environment". This holds true for this model as the diagnostic radiography student has to be actively involved in the process in order to become a caring professional. Therefore the assumption for this model is:

The diagnostic radiography student starts the academic programme with an idealistic and altruistic understanding of caring. This understanding can be nurtured and enhanced by the educator to achieve a culture of caring among students, which will enable them to become caring professionals towards their patients.

The final assumption used from the theory of health promotion (University of Johannesburg, 2010) is that "promotion of health implicates the mobilization of resources". In this model the assumption is:

The higher academic institution provides the context for the teaching and development of a culture of caring among student diagnostic radiographers. This context is a safe learning environment in which the educator can harness the potential of the students and allow the model process to be implemented.

5.3.3 Context of the model

The context of a model is essential for the theory to be beneficial in practice. According to Chinn and Kramer (2011:176), the theoretical relationships are categorised within a context and therefore it is necessary to define the context. The context for this model is a higher education institution, where a diagnostic radiography programme is offered, in Gauteng, South Africa. This context is significant and has meaning due to the research having been conducted within this environment.

5.3.4 Theoretical definitions of model concepts

The central and related concepts are defined in order to establish a conceptual framework for the development of relationship statements. Within the context of diagnostic radiography, becoming a caring professional means having the ability to interact with individuals in a humanistic way and having values of a caring culture being a part of a person, which can be easily transferred, shared and adopted into any environment.

The facilitation of a culture of caring among student radiographers is the central concept of this study. For the purpose of this model, the central concept is defined as:

The facilitation of a culture of caring as an integral part of teaching caring refers to **providing support to help** student radiographers develop a **humanistic behaviour** of **selfless concern, kindness and compassion** towards another individual which conceptualises the attributes of a caring professional. It is a **process** of **making easier** the **interaction between two people** by developing a **set of shared ideas, beliefs and values** of caring that can be **learned and transmitted** to other radiographers.

The related concepts of facilitation, culture of caring, diagnostic radiography student and caring are defined for the purpose of this model below:

> **Facilitation**
>
> In this model, facilitation refers to a process in which the diagnostic radiography educator provides an opportunity for the diagnostic radiography student to begin a learning journey towards developing a culture of caring. Facilitation allows the educator to provide the student with support and assistance in order to be able to achieve their goal of becoming a caring professional.

> **Culture of caring**
>
> A culture of caring is having a set of shared values, beliefs and ideas of caring being a part of a person which becomes a part of their own identity. Based on this culture of caring, the person is able to interact with different individuals. A

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student radiographer who models a culture of caring is a person who interacts with people in a humanistic manner and displays selfless concern, kindness and compassion towards another individual. A culture of caring is not dependent on a specific environment as it is a part of the individual. This culture of caring can easily be shared with other radiographers.

➢ **Diagnostic radiography student**

A diagnostic radiography student is a student who is enrolled in the radiography or MIRS programme at a higher education institution. In this model, the diagnostic radiography student is a person who is unable to become a caring professional on their own.

➢ **Caring**

In this study caring is referred to as an act or a display of kindness, compassion, understanding and sincere concern towards another individual. Being a caring professional means having the ability to demonstrate the attributes of caring towards other individuals. A caring radiographer in this study will be an individual who models a culture of caring and is able to interact with people in a humanistic manner and display kindness, selfless concern and compassion.

5.3.5 Relationship statements

➢ The goal of the student diagnostic radiographer is to make a difference and help people in need. The student wants to become a caring radiography professional but they are unable to achieve this on their own.

➢ Within the context of diagnostic radiography, the current undergraduate curriculum focuses on the technical aspects of the profession, which results in the development of task-driven professionals with no acknowledgement for demonstrating caring attributes towards their patients. In addition, the student is positioned in a clinical environment that does not promote the development of a caring identity.

- The goal of the radiography educator is to provide student radiographers with the support and guidance they need for them to become caring professionals who model a culture of caring.

- Facilitation presents the radiography student with an opportunity to develop the skills needed to achieve their goal of becoming caring professionals.

- A culture of caring will provide the student with a set of shared beliefs, values and ideas that will become a part of their professional identity.

- The radiography student will embrace and implement the values and skills they are taught within this culture of caring. This will enable them to be caring professionals who model a culture of caring.

- The development of a culture of caring will lead to the realisation of radiography students who will become caring professionals. A caring radiographer will be able to share and transmit their set of learned values to other radiographers and students. This may ultimately result in the promotion of a patient-centred approach to caring within diagnostic radiography.

5.3.6 Structure of the model

The visual representation of the model in figure 5.1 will be discussed in more detail below.

The context of the model (figure 5.2) signifies where the model will be operationalised and is represented by a border surrounding the model. The context of this model is a higher education institution in Gauteng, where diagnostic radiography is taught. The colour chosen for the context is an earthy brown. The colour brown signifies safety and security to me. I chose this colour because I wanted to show that the student and the educator will engage in a safe, learning environment.

Figure 5.2: Context of the model

The bottom aspect of the model (figure 5.3) is represented by two hands coming together to begin a learning journey towards the development of a caring professional. I chose hands to represent an educator and the student in my model because when I think about the concept of caring, I associate it with "hands that care" or "caring hands". These two hands are connected by a band that becomes an arrow showing the direction of engagement and the start of the journey into the process.

One hand is blue and this represents the educator who will assist the student on their journey towards becoming a caring professional, by facilitating a culture of caring. The colour blue was chosen for the educator because to me blue symbolises intellect, calmness and stability. I believe that these are attributes which are necessary for an educator to possess in order to interact successfully with students.

The other hand is yellow and this represents a student radiographer who is unable to become a caring professional on their own.   Therefore, they are engaging with the educator to begin this journey towards developing a culture of caring. I selected the colour yellow for the student because to me yellow symbolises enthusiasm, optimism, happiness and joy. When diagnostic radiography students start the programme, they are happy and optimistic.

When the student and the educator come together to begin this learning journey, there is a mixing of the blue from the educator and the yellow from the student. This gives us the colour green. To me green signifies growth and development. This is the ideal colour to show positive change in the right direction towards growth and development as they begin the process together.
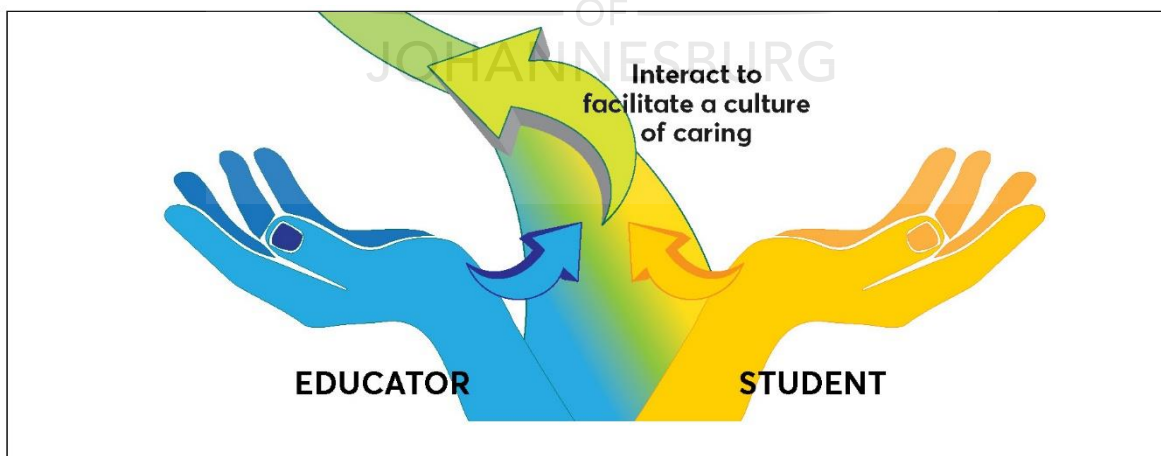
Figure 5.3: Bottom aspect of the model

To depict the process of the model I chose a spiral (figure 5.4). The reason for choosing a spiral is that a spiral shows a journey or a process of development. A spiral also symbolises a journey of evolution and progression. I chose the colour green again

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for my spiral as this shows growth. As the student moves through the process from one spiral loop to another, they will be gaining knowledge. I therefore chose to shade my spiral from light green to dark green depicting the acquisition of knowledge. The model process has three phases, namely relationship, working and termination.

On either side of the spiral, I have inserted two triangles, a blue triangle and a yellow inverted triangle. This is to symbolise the level of involvement and engagement by the educator and student. When they begin the journey, the educator will be more involved as the student will need more support and the student will do less. But, as they move up the spiral through the process, the level of involvement of the educator decreases and that of the student increases. At the termination phase, the student says goodbye to the educator and they move into the outcome phase on their own as a caring radiographer.
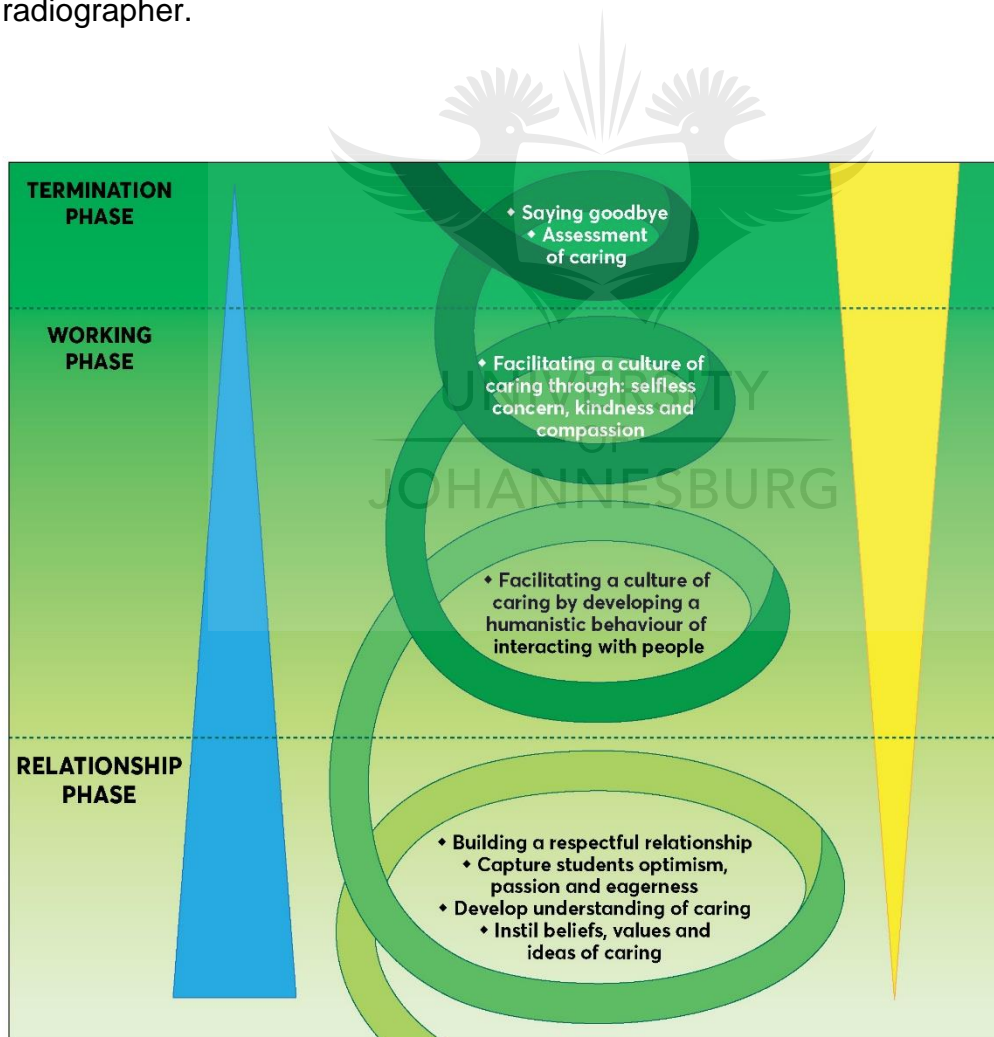
Figure 5.4: Process of the model

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The outcome of the process is a caring radiographer who models a culture of caring. This outcome is depicted by an illustration of open hands and a pink heart. In this phase only the student is involved, hence the yellow inverted triangle continuing up into this phase alone without the educator. The spiral has an arrow at the top, which goes beyond the outcome, and this is to show that the learning process does not end once the student becomes a caring radiographer. The arrow symbolises a process of continuous learning, which is in keeping with the concept of lifelong learning.

The upper aspect of the model is the outcome of the process (figure 5.5). This is a caring radiographer who models a culture of caring. I chose the symbol of open hands and a heart. This is a common symbol often associated with caring. The reason for choosing this symbol is that I wanted to carry through the concept of "caring hands" as mentioned at the starting point of this journey. The hands are yellow representing the yellow hands of the student who has gone through the process and has not lost their optimism, happiness and love for the profession. The hands are open to show that the student is open-minded and willing to continue to learn and grow as a professional. This is in accordance with the idea of lifelong learning, which is promoted in diagnostic radiography education.

In my symbol of a caring radiographer I chose a pink heart and not a red heart because pink is the colour that symbolises caring. I chose the shape of a heart because I wanted to stay true to my study and capture the essence of humanity and the connectedness to the human life. This shows that when the student reaches this phase of the model, they have not lost their humanity and will treat other individuals with human acknowledgement.

Figure 5.5: Outcome of the model

5.3.7 Model process

The process of the model development will be described in three phases:

- Planning
- Implementation
- Evaluation

5.3.7.1 Planning

This phase entailed reviewing the concepts of the model with literature in order to support the implementation of the model. This step is necessary to ensure that the purpose of the model can be achieved. The model in this study has three phases, namely relationship, working and termination. I reviewed each phase in order to generate an approach to implement the model that was well supported by literature and grounded on rigorous rationalising. I also reflected on various teaching and learning philosophies. A social constructivist teaching philosophy was in keeping with the constructivist research design and paradigm that guided this study. I felt this philosophy was the most suitable for my study.

A social constructivist teaching philosophy is a shift from the traditional teaching paradigm of a teacher-centred classroom to a more student-centred environment (Har 2013). Social constructivists believe that the student's reality shapes their learning and knowledge development (Suhendi & Purwarno, 2018:92). This philosophy focuses on collaborative work and considers learning to be a social process (Har 2013:1;

University College Dublin n.d.; Amineh & Asl 2015:13). Vygotsky's work suggests that knowledge is developed in a social context first, then internalised and applied by the individual (Moskal, Loke & Hung 2016:446; Adam 2017:3). I considered this philosophy appropriate for this study as the aim was to facilitate the teaching of caring in a manner that will allow the student to become a caring professional by internalising a culture of caring through the caring values that they will learn. This change in their internal environment will allow them to display attributes of a caring professional in their external environment. Similarly, Miller's pyramid was amended to include an additional level that promotes the development of a professional identity, which will allow a meaningful enhancement of the self (Cruess et al. 2016). Aligned with both these philosophies are teaching activities such as reflective practices, peer discussions and simulation-based learning (Akpan & Beard 2016:394; Amineh & Asl 2015:14). I therefore chose a social constructivist teaching approach aligned with the amended Miller's pyramid for the implementation of my model.

5.3.7.2 Implementation

The implementation of the model will be conducted in three phases, namely relationship, working and termination phase. The operationalisation of this model will be in the form of coursework that can be incorporated into relevant subject modules, starting at first-year level. The content of this coursework will be described in the next section as guidelines to operationalise the model. The implementation of the model is guided by theory, which will be discussed next.

a) Relationship phase

The model begins with the educator and the student coming together to facilitate a culture of caring. The educator provides support to the student and engages with them by enabling them to begin a journey towards becoming a caring professional. In this phase, the student will be provided with theoretical knowledge that will form a solid foundation for their growth and development as they move into the subsequent phases of the model.

The first step in this phase of the model is to develop a trusting and respectful relationship between the educator and student. According to literature, building respectful relationships is important because this promotes the development of a

positive relationship between the educator and student (Gallagher 2013; Claessens, Van Tartwijk, Van der Want, Pennings, Verloop, Den Brok, & Wubbels 2017). This type of relationship creates a supportive learning environment for students and impacts positively on a student's willingness to learn. In my research model, I felt it was important to build a respectful relationship between the educator and students as this will result in the student successfully achieving the desired goal of becoming a caring professional.

There are a number of ways in which educators can build positive, respectful relationships with students. The Scots College (2017) identifies seven simple steps for educators to be able to achieve this. These steps can easily be applied to any teaching environment and would be recommended for radiography educators to adopt. The steps are as follows:

1. Educators should provide structure within the learning environment.
2. Educators should be enthusiastic and passionate about their teaching.
3. Educators should display a positive attitude.
4. Educators should make learning fun.
5. Educators should show an interest in the students.
6. Educators should treat students with respect.
7. Educators should create a safe learning environment for students.

However, remaining true to a social constructivist teaching philosophy, this type of relationship buidling can also be achieved using a more student-centred approach. Therefore, for educators to build this positive relationship during their first interaction with students, they may use "icebreaker" activities to create a trusting, respectful and comfortable teaching environment where students are allowed to express themeselves easily. Icebreakers are described as a way to "warm up" and prepare students for more learning (Dirkes 2014). This method also encourages talking and sharing of stories as a way of getting to know people better. Nottingham Trent University (n.d) indicates that icebreakers are most useful with people that are meeting for the first time and is a way to ensure that everyone has a chance to speak.

There are multiple activities available; however, for my model I have chosen to use the "fear in a hat" activity, human bingo and the obstacle course method. I felt that these activities are appropriate as they will allow all students to become comfortable with each other and with the educator, in a neutral, non-intimidating manner. These activities allow individuals to familiarise themselves with each other and also provide them with a platform to learn empathy while buidling trust and respect. The advantage of these activities is that educators will be able to easily conduct these exercises in any environment. Details on how to undertake this activity can be found in Appendix H, pages 5-6.

The second step in this phase of the model is capturing the students' initial optimisim, passion and eagerness with which they enter the programme. The theme "caring as an integral part of a career choice" revealed that students chose radiography because they wanted to help people in need and make a difference. Therefore it is important to ensure that students remain passionate about radiography and patients in order to be competent, caring professionals. Studies show that students who are not adequately prepared for the reality of the clinical environment become demoralised and question their choice of career (Clouder 2005).

According to literature, students who display an optimistic attitude perform better in their studies (Monden n.d.). Optimism, passion and eagerness are driving forces for students to succeed and achieve their goals (Wray 2015; Johnson 2012). A critical factor in teaching a culture of caring is equipping students with the skills necessary to help them cope in any situaion without becoming demotivated and pessimistic. In order to facilitate the learning of optimisim in my model, I have chosen to follow the work of Martin Seligman (2006). Firstly, Seligman explains three main differences between how pessimistic and optimistic people view challenges (Johnson 2012):

1. **Permanence:** Someone with an optimistic perspective will view negative experiences or challenges as a temporary occurrence.

2. **Pervasiveness:** Someone who is optimistic will view failure as one aspect of life, whereas a pessimistic person will consider their entire life to be a failure.

3. **Personalisation:** Optimistic people look for external causes of negative events and pessimistic people tend to blame themselves.

Secondly, Seligman (2006) developed a model of learned optimism. This model can be utilised to teach students how to deal with various situations within the clinical environment without compromising their own well-being. This model will help students work through their emotions and think rationally when encountering difficult or conflicting situations.

His model is based on the **ABCDE** method, which is:

A - Adversity

B - Beliefs

C - Consequences

D - Disputations

E – Effective new beliefs
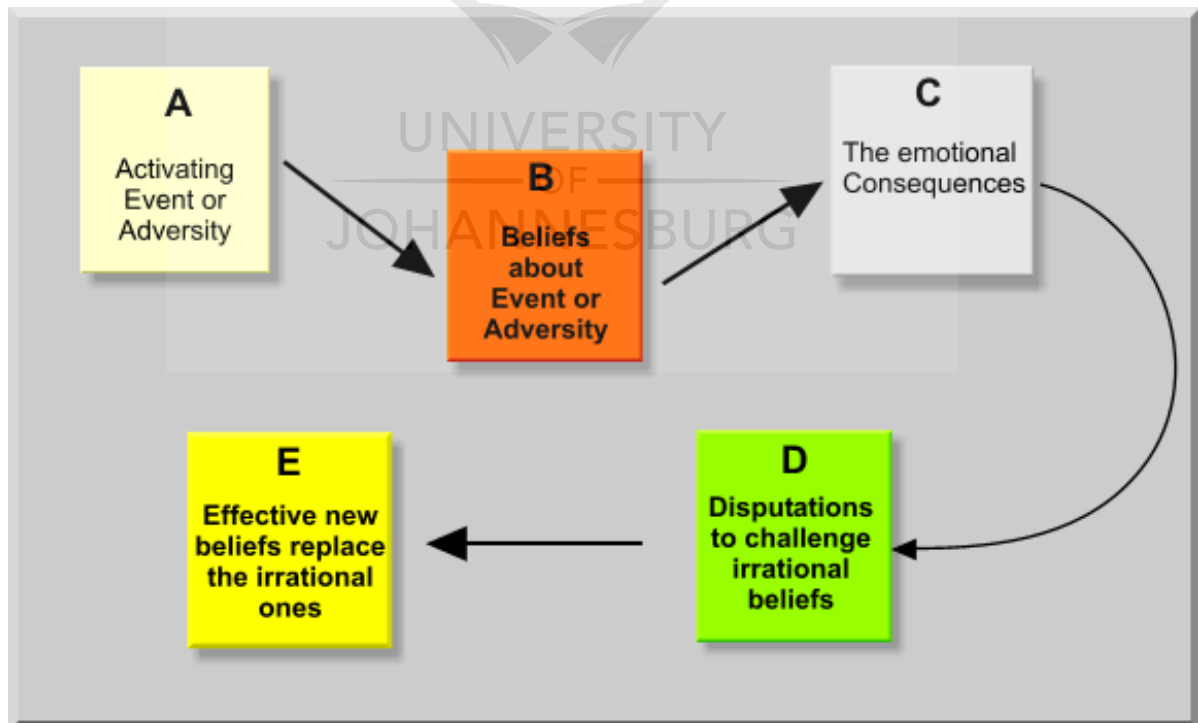
Figure 5.6: Seligman's model of learned optimism

https://marktaylorpsychology.wordpress.com/2017/05/27/5668/

Seligman's work is relevant and can easily be applied to a diagnostic radiography context. Based on this, I have chosen to incorporate Seligman's model of learned optimism into the teaching of a culture of caring in my model. Refer to Appendix H, page 6, activity 4.

The next step in this phase of my model is to develop an understanding of caring in the students. The development of a sound knowledge and understanding of caring is important as a first step, before a student can apply and evaluate their level of caring. Bloom's taxonomy (figure 5.7) provides evidence that the understanding of a concept is important at the beginning of the learning journey. Bloom explains the process of learning as follows (Shabatura 2018):

- Before you can **understand** a concept, you must **remember** it.
- To apply a concept, you must first **understand** it.
- To **evaluate** a process, you must have **analysed** it.
- To **create** an accurate conclusion, you must have completed a thorough **evaluation**.

Based on Bloom's taxonomy, I chose to include the understanding of the concept of caring as part of the first phase of my model.
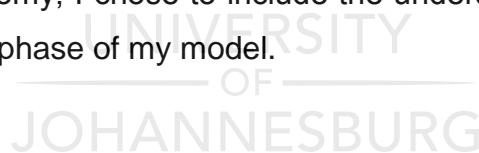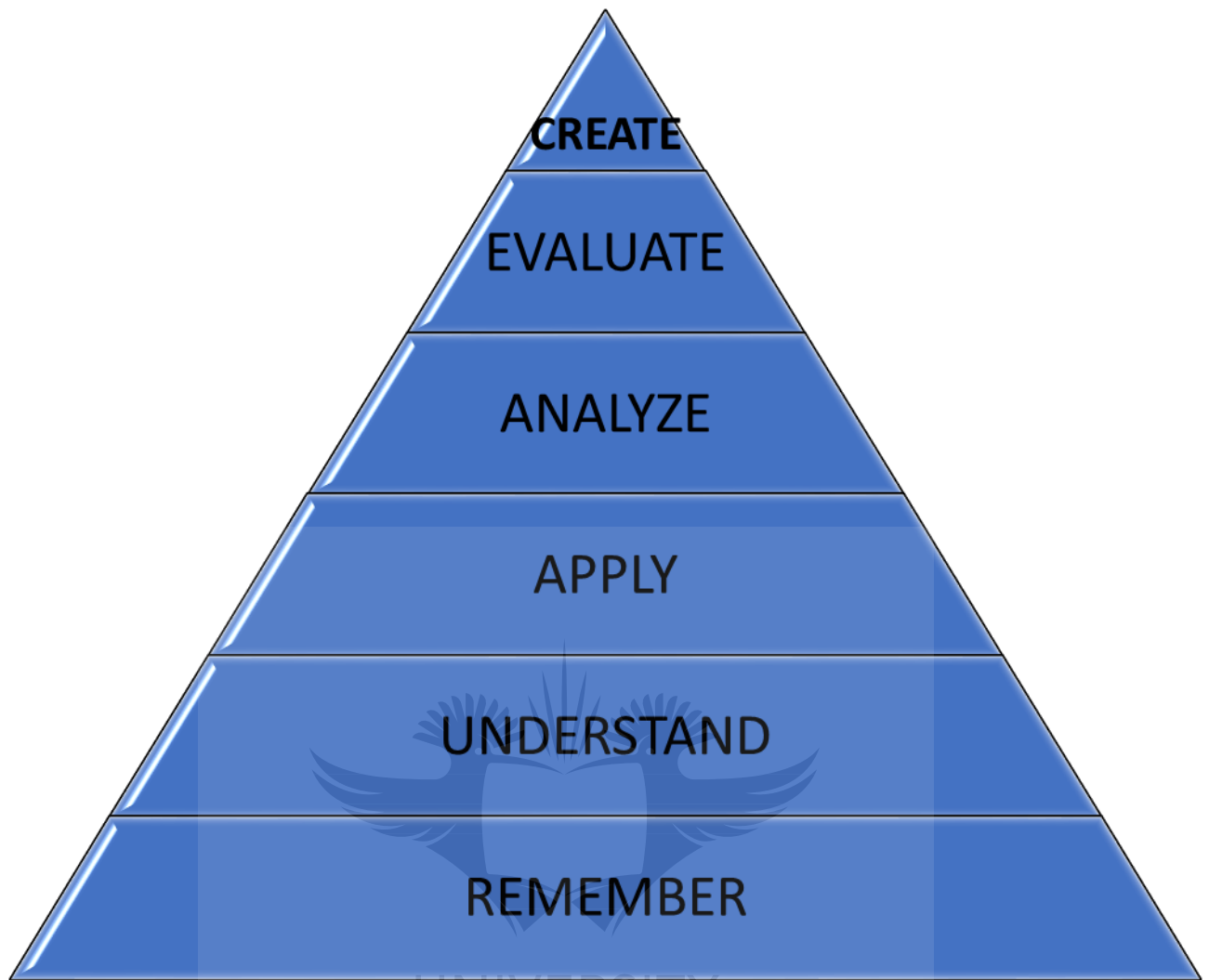
Figure 5.7.: Blooms Taxonomy

In keeping with social constructivism as a teaching philosophy, I have chosen to use problem-based learning as a method to teach students the concept of caring within the context of diagnostic radiography. Refer to the workbook Appendix H, page 8, activity 1. Problem-based learning (figure 5.8) is a teaching method used to promote critical thinking and problem-solving skills of the student. This method promotes self-directed, collaborative and contextual learning (Yew & Goh 2016:76). Studies conducted on problem-based learning indicate substantial effectiveness for long-term knowledge gain (Yew & Goh 2016:76). This method will therefore give students the opportunity to create their own understanding of the concept.
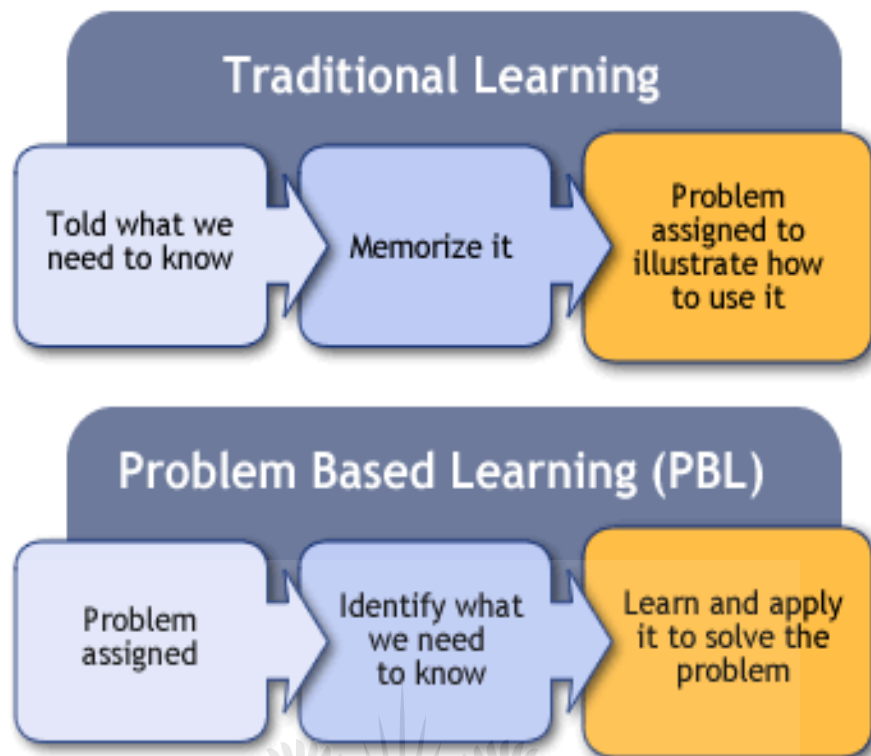
Figure 5.8: Problem-based learning

https://presentlygifted.weebly.com/problem-based-learning.html
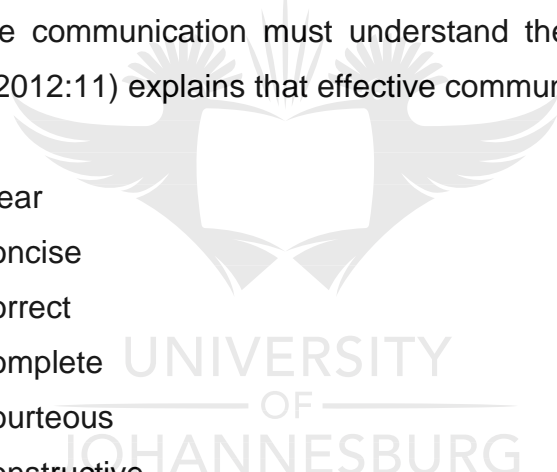
Additionally, in this phase of the model, as part of creating a culture of caring in the students, there is a need to develop a set of shared values, beliefs and ideas of caring. In order to achieve this, while utilising social constructivism, I have opted for peer discussions as part of students working collaboratively with each other (refer to workbook Appendix H, page 9, activity 2). It is important for the students to work as a group to develop this set of shared values, beliefs and ideas of caring which they all agree on, as this will guide them as a group to become caring professionals. Once students have gained a good understanding of caring based on their personal knowledge and their understanding of the various philosophies, collaboratively as a group they will be able to develop this set of shared ideas, beliefs and values. They will learn these values from the beginning stages of their learning so that they will be able to adopt them in any clinical environment.

The knowledge the student will gain in the relationship phase of this model will form the foundation for the development of their subsequent caring skills, which they will learn in the succeeding phases.

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b) Working phase

The next phase of the model is the working phase. This phase of the model entails the development of a culture of caring by teaching students how to interact with individuals in a humanistic manner and how to display caring attributes such as selfless concern, kindness and compassion.

During the focus group interviews, participants indicated a strong need for interpersonal interaction development and improving their communication skills with different types of patients. Therefore, the first step of this phase will be the development of effective communication skills as a means to improve interpersonal interactions. Literature indicates that communication may be delivered in many forms, namely speaking, texting, email, etc. However, for communication to be effective, all parties involved in the communication must understand the message transmitted correctly. Zeppetella (2012:11) explains that effective communication must be:

> ➢ clear
> ➢ concise
> ➢ correct
> ➢ complete
> ➢ courteous
> ➢ constructive

In addition to these requirements, there are four simple steps that can easily be implemented by any individual when communicating with people (Robinson, Segal & Smith 2018). These steps are as follows (Robinson, Segal & Smith 2018):

1. Engaged listening

Effective communication is more about the listening rather than the speaking. Engaged listening is different from just hearing the person. When you are an engaged listener you are able to pick up on the speaker's feelings and emotions from what they are saying. This will enable you to better understand the person.

2. Non-verbal communication

This includes facial expressions, body gestures, posture, eye contact, tone of voice, etc. When someone is speaking to you, avoid crossing your arms and try to maintain a neutral stand. Make eye contact with them. Pay attention to your tone of voice, try not to be condescending or judgemental. Respond according to the context of the conversation.

3. Managing stress in the moment

When we are stressed by a conversation we can often say thing which we later regret. Try to stall before responding; a stalling tactic may be asking the person to repeat the question. This will give you more time to think before responding. Pause and take a minute before answering.

4. Asserting yourself in a respectful way

Be assertive in an open and honest manner but not in a hostile and aggressive way. For example, learn to say "no" when there is a need. Feel empathy for a person's workload but still emphasise the need for the current task to be completed.

A common challenge when communicating with patients in a radiography context is having the ability to communicate with patients that are anxious and fearful. Patients who visit the radiology department very often experience anxiety. This could be associated with being in an unfamiliar environment or not being fully aware of what to expect during the radiology examination. Gustafson (2015) uses a simple guide to dealing with anxious patients:

1. Listen to your patient

It is important to let your patient voice their concerns. Let them speak and just listen. Sometimes that's all they need is to know someone is listening.

2. Provide a full explanation

Explain everything that you will be doing and why it is necessary to do. Fear of the unknown can cause a lot of anxiety.

3. Don't simply tell your patient to relax, rather show them how

Some people can get more agitated when told to relax. Rather provide them with methods to calm them down like breathing exercises. Sometimes patients already know what they need to calm down.

4. Try using some form of humour

Try to lighten the mood and be sincere. Try to take your patient's mind off the procedure and ask them about their family or kids.

5. Be prepared for stressful situations

Know yourself and how you react to certain situations. Recognize those feelings and take a few minutes to resolve them before you speak or act. Be patient and calm.

6. Show empathy

Do not be judgmental towards your patient. Be aware of your thoughts and feelings. Try to put yourself in your patient's shoes before you react."

A crucial part of interacting with people is learning how to communicate effectively. Consequently, grounded on the theme "unpreparedness for interpersonal interactions" that emerged from the data (chapter 3) and in line with literature, and with the intention of adequately preparing students for these interpersonal encounters, I felt that there was a need to incorporate effective communication skills into their academic modules. I have chosen to use visual teaching as a method to teach effective communication (refer to workbook, Appendix H, page 10, activity 1).

Using visual aids in the form of video demonstrations can be effective in teaching various concepts and allows for a better understanding of ideas. Studies show that visual aids allow conceptual thinking and provide a realistic environment for the learner (Shabiralyani, Hasan, Hamad & Iqbal 2015:226). The benefit also is that students will have the freedom to pause and rewatch certain aspects of the video for better comprehension.

The next step in this phase of the model is the development of humanistic skills in the student as a way to promote a more patient-centred and caring interaction. Interacting with patients in a humanistic manner is fundamental in ensuring that patients are treated as human beings as opposed to simply being objectified by the body part being imaged. This idea of objectifying patients was strongly emphasised by the participants of this study and comes across in the theme "barriers and enablers to the development of a caring identity". In order to treat patients as human beings, students need to be taught how to be kind, compassionate and altruistic towards their patients.

Being compassionate towards patients is critical. Roach describes compassionate care as "immersion into the pain, brokenness, fear, and anguish of another, even when that person is a stranger" (Burnell & Agan 2013:180). Compassion allows the radiographer to view the patient for who they are and to provide them with a patient-centred approach to caring. This approach will allow the radiographer to focus on the patient in front of them and enable them to display respect and concern towards them. Literature describes compassion as having the ability to alleviate the patients' suffering and being able to attend to their needs in the best way possible (Bleiker et al. 2016:258). Caring for patients in a respectful, empathetic manner is a way of displaying such compassion.

The teaching philosophy guiding this study is social constructivism. Social constructivists believe a student's reality shapes their knowledge and learning. Therefore, I felt the best way to develop the skills of compassion would be by allowing students to demonstrate compassion in a realistic manner using role-playing exercises. Refer to the workbook, Appendix H, page 11, activity 3.

Compassion, kindness and empathy are very similar concepts which generally go hand-in-hand. Acts of kindness can include the simplest of things such as (Capital Healthcare Solutions 2017):

- a sincere greeting
- smiling at a random person
- offering a listening ear

- offering an honest compliment

- giving words of encouragement

- saying thank you

- helping someone in need

These acts of kindness can easily be applied to a radiology environment by:

- sincerely greeting the patient with a smile

- attentively listening when the patient is speaking

- not answering the phone while with a patient

- offering the patient some water or a blanket

- assisting the patient before, during and after the examination

As a way of encouraging kindness in students, I believe it is important for students to acknowledge random acts of kindness that they have experienced or acts that they have performed. By encouraging the sharing of experiences, the hope is to inspire other students to aspire to be kind individuals. This shared experiences approach may be conducted regularly to make kindness a part of the student (refer to Appendix H, page 10, activity 2).

Selfless concern or altruism is also an attribute of caring that was emphasised in the focus group interviews. Altruism is often described as self-sacrifice and service to others (Harris 2018:3). Gogola (2018:49) understands selfless caring to be a way in which we involve the self to alleviate the suffering of others and as being stimulated from a dedication to helping and healing. In my model, I felt that the best way to achieve selfless behaviour and altruism in students was by them engaging in community outreach programmes (refer to Appendix H, page 12, activity 4). An outreach programme can be explained as "experiential education, in which students offer services to the community" (Bhayat & Mahrous 2012:20). This method will allow students to learn the skill of helping others in a selfless manner and will endorse selflessness.

Additionally, I felt demonstrating good caring practices to the student would enhance their understanding of compassion, kindness and selfless concern (refer to Appendix

H, page 13, activity 5). Simulation-based learning is a way of engaging with students in a more interactive, realistic manner. This method is also in keeping with a social constructivist teaching philosophy, where students will be given the opportunity to learn from each other. In the focus group interviews, participants indicated a preference for visual teaching over the more traditional methods. Students felt they could understand information much better after seeing someone demonstrating certain skills. Simulated scenarios can be recorded and played back to students for reflection and discussion.

Simulation-based teaching is increasing and becoming a popular tool to use. Higher education institutions that have access to a simulation lab should make full use of its ability to provide students with a realistic, safe environment to learn. Some advantages of simulation-based learning are (Krishnan, Keloth & Ubedulla 2017:85):

- ➢ immersive learning
- ➢ better understanding of abstract concepts
- ➢ skill acquisition and maintenance
- ➢ student satisfaction and confidence
- ➢ standardised training
- ➢ training and retraining
- ➢ assessing performance
- ➢ analysis of training
- ➢ team training

Furthermore, as part of the working phase of this model, I thought that it was necessary to ensure that students do not view caring as a once-off skill, easily forgotten. I wanted to foster the concept of lifelong learning in students. In accordance with a social constructivist teaching philosophy, I believe the best way to achieve this is by teaching students how to become reflective practitioners (refer to Appendix H, page 15, activities 1 and 2). According to literature, reflective practice may be a concept that students learn for the first time in higher education. However, subconsciously people have been reflecting their whole life: "thinking about and learning from past experiences to avoid things that did not work and to repeat things that did" (Koshy, Limb, Gundogan, Whitehurst & Jafree 2017).

Reflective practice may be undertaken either occasionally in a formal manner or in a more abstract manner that is more ongoing. "Reflection is the examination of personal thoughts and actions. For practitioners this means focusing on how they interact with their colleagues and with the environment to obtain a clearer picture of their own behavior" (Oluwatoyin 2015:28). In this way it is a process of understanding oneself. It is important to remember that people can learn from others' experiences and not just their own. A person can place themselves in the same situation and try to analyse how they would have handled it (Koshy et al. 2017). There are two types of reflection: reflection-on-action, which is reflection after experiencing a situation or encounter, and reflection-in-action, which is about being reflective during an encounter (Oluwatoyin 2015).

The Gibbs model of reflection is a well-known tool used for reflection (Lia 2016). This model is a practical method that can be taught to students as a way of reflecting on their experiences. Gibbs' reflective cycle has six stages:

1. Description
2. Feelings
3. Evaluation
4. Analysis
5. Conclusion
6. Action plan
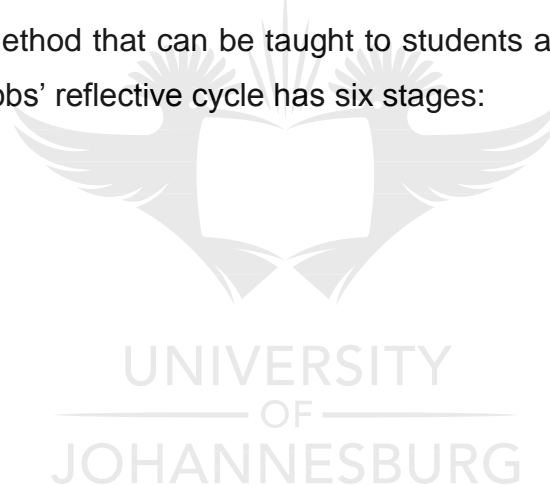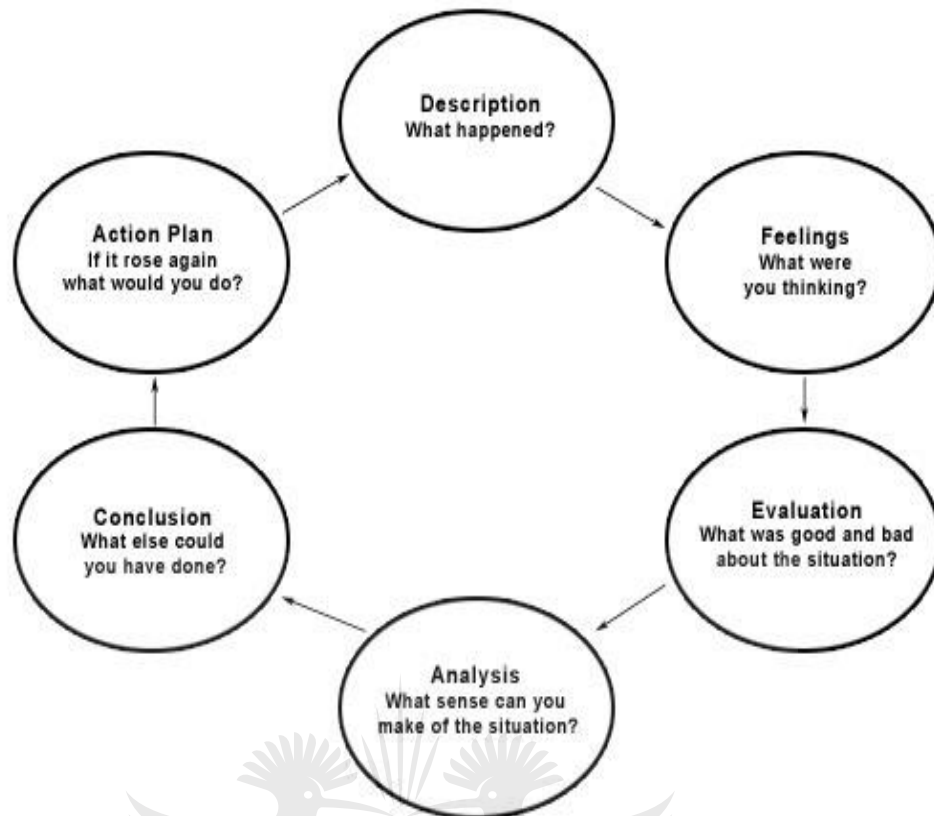
Figure 5.9: Gibbs' reflective cycle

http://hces-online.net/courses/nursingscience/ac291/images/gibbs.jpg

This model is effective in allowing individuals to:

- challenge their assumptions
- explore different/new ideas and approaches towards doing or thinking about things
- promote self-improvement (by identifying strengths and weaknesses and taking action to address them)
- link practice and theory (by combining doing or observing with thinking or applying knowledge)

Based on the fundamental benefits and significance of reflective practice, I have chosen to include this method into the teaching of caring in my model as a way of developing a culture of caring among student diagnostic radiographers, which will become a part of their personal and professional identity. Reflective practice will allow students to internalise the concept of a caring culture and they will be able to demonstrate these attributes and qualities in their external environment (refer to Appendix H, page 20, activity 1).

c) Termination phase

The last phase of the model is the termination phase. In this phase the student will have a final assessment to evaluate the skills they have learned to develop a culture of caring. An assessment is defined as a process of measuring a student's progress (O'Shaughnessy & Joyce 2015:198). Evaluation is a necessary part of learning. According to Morrison (2003), the purposes of evaluation are to:

- ❖ ensure that teaching is meeting students' learning needs
- ❖ identify areas where teaching can be improved
- ❖ inform the allocation of faculty resources
- ❖ provide feedback and encouragement for teachers
- ❖ support applications for promotion by teachers
- ❖ identify and articulate what is valued by medical schools
- ❖ facilitate development of the curriculum

Assessments are also a driving force for learning (O'Shaughnessy & Joyce 2015:198). There are various types of assessment methods that can be utilised, namely multiple-choice questions (MCQs), essay questions, objective structured clinical examinations (OSCE) and oral assessment (O'Shaughnessy & Joyce 2015:199). A summative assessment is the evaluation of the student's overall progress. A summative assessment can be conducted in the clinical environment to assess the student's ability to perform in a real-life scenario.

Miller's pyramid also provides a guide for developing assessments. It is a well-known tool used extensively to develop and create learning programmes. Researchers, however, felt that there was a need to add another level, "IS", to the original pyramid as they considered professional presence as a vital concept in medicine and healthcare. This level of "IS" aligns with the professional behavioural changes and softer skills development which are necessary for diagnostic radiography students.
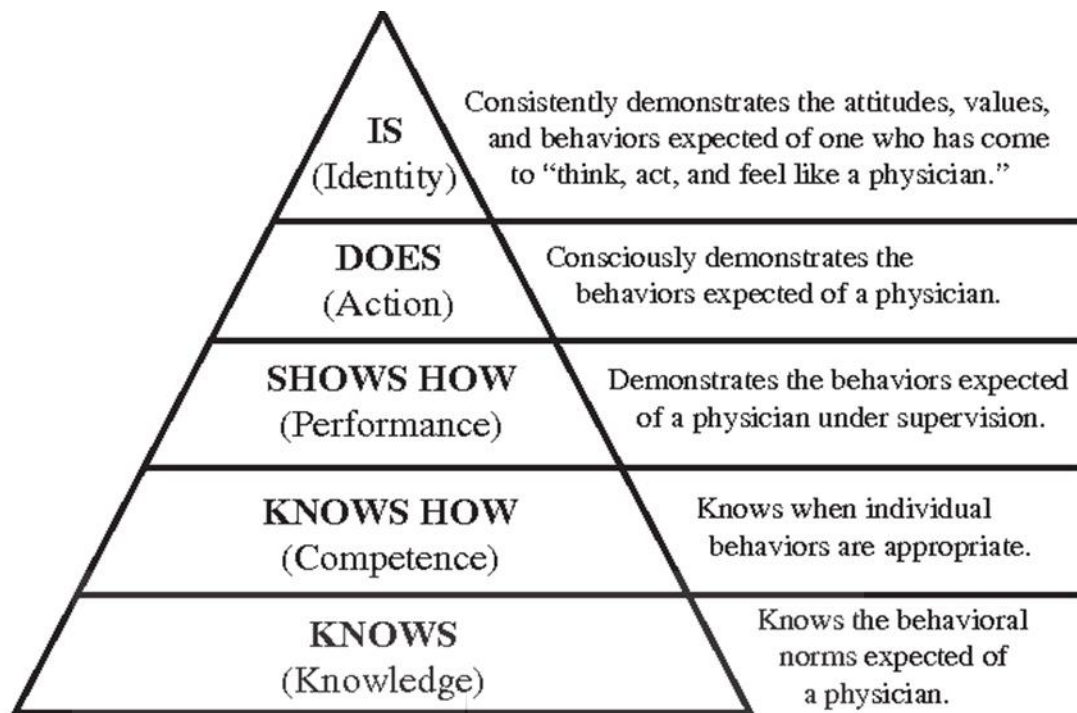
Figure 5.10: Miller's pyramid

https://www.semanticscholar.org/paper/Amending-Miller's-Pyramid-to-Include-Professional-Cruess-Cruess/8d9b870bb05d45dcdbb26b00bf2ab649d911c047

The final assessment in my model will be conducted in the clinical environment where the student undertakes their WIL (refer to Appendix H, pages 17-19, activities 1 and 2). This will allow the educator to assess the student within the context of a diagnostic radiography environment where the student should be able to model a culture of caring. The assessor will be able to determine if the student is capable of demonstrating the skills they were taught during the working phase.

Additionally, in this termination phase, once the student has been assessed and is considered a caring professional, the student has to say goodbye to the educator and continue their journey of lifelong learning on their own. At the end of this phase the educator will be satisfied that the student is a caring professional who has been equipped with the skills necessary to model a culture of caring.

5.3.7.3 Evaluation

The terminus of this model is a caring radiographer who models a culture of caring. Therefore, when this model is implemented, the end result should be a radiographer

who has the skills necessary to interact with patients on a caring level. The values, beliefs and ideas of caring developed in the radiographer will guide them to be more conscious of their actions and enable them to be caring professionals.

5.4 GUIDELINES TO OPERATIONALISE THE MODEL

Guidelines to operationalise the model will be described below. These guidelines provide a practical approach for implementation in a higher education institution.

5.4.1 Planning

This model will be implemented as coursework within a diagnostic radiography module of choice by the educator. The guidelines are practical, which provides flexibility to be incorporated either into a module such as Professional Practice (which focuses on patient care, professionalism research etc.) or Diagnostic Practice and Principles (which focuses more on the technique or positioning) in order to provide a more overall learning experience for students.

The learning concept to be taught will be a culture of caring.   The aim of this learning concept is to facilitate the development of a culture of caring among student radiographers. This will be achieved through the delivery of six learning units. The guidelines provided for implementation are described for the first-year level of study, but these learning units should be carried through to the final year of study. These guidelines can easily be adapted for the higher levels of study by simply changing the scenarios to be suited to the relevant year.

A workbook will be provided for the educator as a practical guide to follow for the implementation of the learning units (Appendix H). At the end of the workbook will be a table with suggested scenarios for the higher levels of study. Access to a simulation lab or radiographic clinic will be necessary for the implementation of the model guidelines. If the simulation lab has the resources for video-recording, it is recommended that use be made of this as the videos can be used as a supplementary teaching tool.

5.4.2 Implementation

This model will be implemented by delivering the following six learning units:

Learning unit 1a	Relationship building and learned optimism
Learning unit 1b	Understanding the different caring philosophies and learning a set of shared ideas, values and beliefs
Learning unit 2	Understanding a humanistic way of interacting with individuals and showing selfless concern, kindness and compassion
Learning unit 3	Understanding reflective practices
Learning unit 4	Demonstration of caring
Learning unit 5	Assessment of caring
Learning unit 6	Developing a caring identity

Each learning unit will be described under unit learning outcomes, specific outcomes, learning content in the form of activities and assessments.

LEARNING UNIT 1A: RELATIONSHIP BUILDING AND LEARNED OPTIMISM

Unit learning outcome

The aim of this unit is to develop a trusting and respectful relationship between the educator and students and for students to understand and apply Seligman's model of learned optimism (2006).

Specific outcomes

At the end of this learning unit the student will be able to:

- display a positive relationship with the educator and other students
- explain and apply learned optimism using Seligman's model in their daily life

Learning content

Activity 1: Fear in a hat

This activity will be conducted with all students present. Depending on class numbers, this exercise may take time and can be conducted over a few lecture periods or in groups.

Students and the educator will write down their fear and place it into a big hat. The class will sit in a circle and the hat will be passed around. Each person will have a turn to pick one fear. When a person picks a fear, they must try and explain what they think that person, whose fear that is, might feel. This exercise helps students to build relationships of trust and respect through the use of empathy.

Once everyone has had a turn, students will be allowed a few minutes to engage in reflective discussion of what they have learnt and gained from this exercise.

Activity 2: Obstacle course

This activity will be conducted in groups of 2 or 3 and will take place outside. The educator will take the students outside to a field or sports ground and set up an obstacle course using cones, steps, chairs or any objects available. One student is blindfolded and their team members have to guide them through the course. This is a simple exercise to develop trust. The educator should also participate in order to guide the trust and respect of the students.

Activity 3: Human bingo

This can be conducted over 2-3 lecture periods, depending on student numbers. Students will be given a grid card similar to the one below. This card can be adapted to suit different environments and contexts. Students must walk around and interact with each other. They must find someone with at least 10 of the descriptions on the card. The same person cannot be used twice. This activity is a good way of encouraging students to talk and learn more about each other. The educator should also participate so that the educator and students learn more about each other.

Wearing black socks	Likes to exercise	Born in the same month as you	Likes selfies	First name starts with A
Can speak three different languages	Can cook	Lives at university residence	Knows how to play a musical instrument	Loves tea
Has a pet	Has children	Loves coffee	Is a vegetarian	Has a twin
Is the eldest child	Married	Is left handed	Has an allergy	Is not a morning person

http://www.instruction.greenriver.edu/esolfac/course_materials/L6/GettingStarted/Human_Bingo.pdf

Activity 4: Introduction and application of learned optimism

This can be conducted in the form of peer discussions in 2-3 lecture periods.

The educator will provide students with Seligman's model of learned optimism explaining the use of ABCDE. The educator will allow students time to reflect on the ABCDE model. Then the students will be given time to reflect on any adverse event, whether it was personal or observed. They should try to apply the ABCDE method to determine how they handled the situation and then apply the same method to determine how they could have handled the situation. These examples can be shared with the class for peer discussions. The clinical example provided by Seligman may be used as an example for students to understand the application of the model.

Practical example for understanding the concept

Below is a practical example from Seligman's book *Learned optimism* which can be used to help students understand the model and its use in the clinical environment (Seligman 2006:270).

"Adversity: I have six hours left of my shift, we're short-staffed, and a doctor just told me I was too slow.

Belief: She's right. I am too slow. I should be able to keep things running smoothly at all times, and I don't. The other nurses would be able to keep up. I guess I'm just not right for the job.

Consequences: I feel really down on myself, and I feel guilty that I am not doing as good a job as I ought to. I feel like running out of the hospital in the middle of my shift.

Disputation: It would be ideal if things ran smoothly all the time, but that's not realistic, especially around a hospital. Anyway, it is not my responsibility alone to make sure everything is taken care of. I'm doing just as well as the other nurses on the shift. I may have been a little slower than usual, but we're short-staffed today so I am taking on extra responsibility, which means things take a little longer. I can feel good about taking on the extra work instead of feeling bad about the slight inconvenience it causes the doctor.

Energization: I feel a lot better about myself and much, much less guilty about any inconvenience to the doctor. The prospect of six more hours doesn't seem so overwhelming."

LEARNING UNIT 1B: UNDERSTANDING THE DIFFERENT CARING PHILOSOPHIES AND LEARNING A SET OF SHARED IDEAS, VALUES AND BELIEFS

Unit learning outcome

The aim of this unit is to allow students to develop an understanding of the concept of caring.

Specific outcomes

At the end of this learning unit the student will be able to:
- explain and discuss the concept of caring
- construct and share a set of ideas, values and beliefs

Learning content

Activity 1: Understanding the concept of caring

This learning activity can be delivered in the form of group work using problem-based learning. This may take 2-3 lecture periods.

The following scenario will be posed to the groups:

A 55-year-old female patient arrives at the radiology department in a wheelchair. She is covered with a blanket and she is warmly dressed with many layers of clothing. She needs a chest X-ray before they can take her to theatre for a surgical procedure. The patient is very scared and anxious as this is her first time having an X-ray and she does not know what to expect. She is also fearful of her diagnosis. Review the different theories on caring and discuss what caring means to you and how you would apply these theories in caring for this patient.

Activity 2: Group discussion and presentation of understandings

This activity can be done over 1-2 lecture periods, depending on student numbers.

Students form groups of 8-10 people per group (should be different individuals from the group for activity 1 in order to share knowledge). Within these groups the educator asks students to reflect on their understanding of caring and to write down a set of ideas, values and beliefs which they feel can easily be applied/are applicable in the clinical environment. These must then be shared with the class as a whole to develop a final set of shared ideas, values and beliefs of caring.

Assessment

To assess the student's level of understanding of caring, a formal test may be written either with multiple-choice questions or simple explanation-type questions. This is appropriate for first-year level of assessment to demonstrate understanding of knowledge.

LEARNING UNIT 2: UNDERSTANDING A HUMANISTIC WAY OF INTERACTING WITH INDIVIDUALS AND SHOWING SELFLESS CONCERN, KINDNESS AND COMPASSION

Unit learning outcomes

The aim of this unit is to demonstrate to students how to interact with patients in a humanistic way while incorporating relevant aspects of Watson's theory of human caring. Additionally, the aim of this unit is to enable students to understand how to display the attributes of a caring nature by means of selfless concern, kindness and compassion.

Specific outcomes

At the end of this learning unit the student will be able to:

- explain and describe effective communication
- demonstrate an understanding of selfless concern, kindness and compassion

Learning content

Activity 1: Understanding effective communication

This will be conducted in the form of a video demonstration of effective and ineffective communication in the workplace. If the educator has the time and resources, they may record themselves role playing these scenarios or they can use videos available online.

The educator will play two videos, one on effective communication and the other on ineffective communication. Then the students should answer the following questions:

- What does effective communication mean to you?
- Describe how you would communicate effectively.

Activity 2: Exercise to learn acts of kindness

This will be conducted in the form of group discussions first and then a classroom discussion with all students together. This can be conducted in 2-3 lecture periods.

Students form groups of 8-10 people per group. The educator asks the students to think of acts of kindness that they have witnessed or experienced. These acts can be simple gestures that made them feel good. This will allow them to reflect on what acts of kindness they consider important. Then the class discusses these acts of kindness by writing down all ideas on flipcharts or on the blackboard/whiteboard. Now students are asked to consider how they can apply these acts of kindness to patients. This will make students more conscious of their patient encounters in the future.

Additionally, educators should encourage students to maintain a kindness journal or logbook. In it they record their acts of kindness for the day or week, both on campus and within the clinical environment. These acts of kindness can be shared with other students as a way of encouraging kindness and making it a way of life.

Activity 3: Teaching compassion (groupwork)

This will be conducted as a collaborative exercise in the form of group discussions.

The educator gives students guidelines on how to display compassion. Then the educator will ask students to develop a scenario of a radiographer interacting with a patient in which compassion is demonstrated. This scenario can be role played by the group members. Other students must reflect on this scenario and discuss the following:

  a. Was compassion demonstrated?
  b. What were the radiographer's strengths?
  c. What were the radiographer's weaknesses?
  d. Any suggestions for improvement

Activity 4: Learning selfless concern

This will be conducted in groups of 8-10 people. This task will be conducted over a period of 6-8 months.

The educator encourages students to engage in a community outreach project of their choice. They must choose a project that they feel strongly about and decide what they would like to do to assist this cause. They will be given a few

months to choose a charity organisation they would like to assist. Then they must decide how they will assist this organisation. It can be simple tasks such as running a food drive, spending time playing with children in an orphanage or collecting old clothing. At the end of the time allocated they must present to the class their outreach project.

Activity 5: Educator demonstrating a humanistic way of interacting with patients, showing selfless concern, kindness and compassion

Role-playing exercises/simulation-based teaching in the form of realistic scenarios will be used. These can be conducted in 2-3 sessions, depending on availability of time within the designated module.

A case scenario demonstrating good caring practices should be simulated in a simulation lab or radiographic X-ray room in order to demonstrate to students how to interact in a caring humanistic way with patients. In this activity, the students will be observers. This exercise can be simulated by senior students or the educators. At this level students will not yet be clinically competent, so the clinical case of choice is not relevant; however, a general X-ray case is recommended. Below are suggested scenarios:

A 32-year-old female patient presents to the radiology department with fever, cough and sore throat. The referring physician requests a chest X-ray to rule out possible infection (pneumonia or bronchitis).

A 70-year-old male patient arrives at the radiology department in a wheelchair, with a many layers of clothing and a blanket over him. He needs a knee X-ray due to a fall in the shower. The patient is fully cognitive and has limited mobility on the injured side.

After the scenario is completed, students have 30 minutes for a peer discussion of the simulated encounter. Depending on the simulation lab being utilised, these simulated scenarios can be recorded to allow for further discussions at a later time. Also, the recordings can be shared with students so that they can learn at their own pace when reviewing these videos later on.

LEARNING UNIT 3: REFLECTIVE PRACTICE

Unit learning outcome

The aim of this unit is to develop an understanding of reflective practice among students by providing them with the necessary tools to become reflective practitioners.

Specific outcomes

At the end of this learning unit the student will be able to:

- explain the use and importance of reflective practice
- apply the Gibbs model

Learning content

Activity 1: Introduction to reflective practice

This can be conducted in the form of a formal lecture in 2-3 lecture periods.

The educator will conduct a theory lecture covering the following topics:

- What is reflective practice?
- How to become a reflective practitioner using the Gibbs model

Activity 2: Personal reflection

This can be conducted as an individual assignment based on the teachings from activity 1.

The educator tells the students to think of any recent experience, either positive or negative. Using the six stages of Gibbs' model, the students must write a reflective report in as much detail as possible. This will allow the student to familiarise themselves with and better understand the different stages of the model.

LEARNING UNIT 4: DEMONSTRATION OF CARING

Unit learning outcome

The aim of this unit is for the student to demonstrate their understanding of caring.

Specific outcome

At the end of this learning unit the student will be able to:

- demonstrate humanistic caring through selfless concern, kindness and compassion

Learning content

Activity 1: Students demonstrate a humanistic way of interacting with patients showing selfless concern, kindness and compassion

Role-playing exercises/simulation-based teaching in the form of realistic scenarios will be used. These can be conducted in 2-3 sessions, depending on availability of time within the designated module. Ideally all students should have a chance to participate.

This is similar to activity 1 in unit 2, but now students will be given the opportunity to be involved in the simulation as the radiographer and patient. The same scenarios can be used to see if students are able to demonstrate the necessary attributes of a caring radiographer.

Once again after the simulation, peer discussions can take place. Here the student involved can share their experience of being a caring radiographer and how it made them feel. The student who was the patient can share their experiences of being a patient and how it made them feel. This demonstration may be evaluated using a peer assessment format. This will allow students to reflect on their skills and give them a chance to express to peers why they approach things in a certain way.

LEARNING UNIT 5: ASSESSMENT OF CARING

Unit learning outcome

The aim of this unit is to assess the student's ability to demonstrate caring attributes towards a patient

Specific outcomes

At the end of this learning unit the student will be able to:

- apply their knowledge of caring
- demonstrate the ability to interact with patients in a humanistic manner and to show selfless concern, kindness and compassion towards patients within the clinical environment

Learning content

Activity 1: OSCE assessment

This assessment will be conducted in a clinic or practical centre at the higher education institution. The time allocated for this will vary depending on the number of stations set up for the assessment.

There will be a variety of different stations set up assessing different caring skills of the student. Each station will be timed and the student will be required to move from one station to the other until all stations are completed. This will assess the demonstration of caring in different situations in one assessment. Possible stations:

- Caring for a patient prior to the examination
- Caring for a patient during the examination
- Caring for the patient after the examination
- Communication with an anxious family member
- Caring for a patient in a wheelchair
- Caring for an elderly patient

Activity 2: Clinical assessment

This assessment will be conducted in the clinical environment where the student undertakes their WIL.

The student will be required to perform an X-ray examination, for a first-year level student, on a patient in the clinical environment. This will assess their ability to interact and demonstrate caring attributes within a real-life situation. The assessment tool below will be added to the normal clinical assessment tool that is used to assess other clinical skills such as positioning, equipment and patient care. This tool is a recommendation and may be adapted accordingly.

Did the student demonstrate the following caring attributes towards the patient before the examination?	Yes	No
1. Approached the patient enthusiastically		
2. Greeted the patient with a sincere smile		
3. Listed attentively to the patient		
4. Used paraphrasing to demonstrate good listening and understanding of the patient's condition		
5. Used the power of touch to reassure the patient		
6. Explained the procedure in simple terms so that the patient understands		
Any additional comments:		

Did the student demonstrate the following caring attributes towards the patient during the examination?	Yes	No
1. Ensured that the patient was comfortable at all times (Providing a pillow or blanket)		

	Yes	No
2. Was attentive to the patient's needs without the patient having to request anything		
3. Continued to communicate effectively with the patient		
4. Was authentically present in the moment with the patient, i.e. did not use cellphones during the examination, kept an eye on the patient at all times		
5. Used the power of touch to reassure the patient		
Any additional comments:		
Did the student demonstrate the following caring attributes towards the patient after the examination?	**Yes**	**No**
1. Assisted the patient out of the room		
2. Explained the procedure that would follow		
3. Asked the patient if they required any other information		
4. Answered all the patient's questions in a kind and compassionate manner		
Any additional comments:		

LEARNING UNIT 6: A CARING IDENTITY

Unit learning outcome

The aim of this unit is to allow the student to develop their own caring identity. In this way the skills learnt become a part of them.

Specific outcome

At the end of this learning unit the student will be able to:

- develop a lifelong caring identity through reflective practice

Learning content

Activity 1: Reflective journal

At first-year level students begin their WIL after spending six months on campus. Therefore it is anticipated that the student would have been equipped with the skills necessary to engage in reflective practices.

At the beginning of their clinical rotations students should be given journals to document their clinical experiences. This can be done daily, weekly or every two weeks, depending on the student's rotation schedule. When the student is back on campus, their experiences can be shared with the rest of the class to promote sharing of knowledge.

5.5 EVALUATION OF THE MODEL

An evaluation of the model based on its relevance and role within higher education was necessary. This was achieved using the evaluation questions developed by Chinn and Kramer (2011:197). Critical reflection by the researcher is crucial and according to Chinn and Kramer (2011:197-205), the researcher should share their reflection with colleagues in order to gain meaningful insight into and feedback on the model structure and process.

For the purpose of evaluation in this study, I presented the model to a research doctoral committee. This committee consisted of radiography and nursing educators. These educators are experienced and have been teaching for over 10 years. The nursing professor had immense knowledge on qualitative research as well as model

development. The supervisors of the study are also educators and they were present for the model evaluation process. The model was evaluated by answering Chinn and Kramer's questions:

1. How clear is this model?
2. How simple is this model?
3. How general is this model?
4. How accessible is this model?
5. How important is this model?

The model was received positively and a few suggestions for changes were made.The doctoral committee provided recommendations on the structure and outline of the model to be better aligned to the researcher's explanation of the model. This included adding an assessment at the termination level, the student triangle continuing without the educator into the outcome stage and the spiral having an arrow to depict the continuous process of learning and developing caring skills, in keeping with a life-long learning journey. Additionally, the colour shading needed to be more visible. These recommendations were discussed with the supervisors and the necessary changes were implemented.

5.5.1 Clarity of the model

The question on clarity refers to semantic clarity, semantic consistency, structural clarity and structural consistency (Chinn & Kramer 2011:197). Semantics refers to the meaning of the concepts being well understood. Structural clarity and consistency refer to understanding the connections between the concepts (Chinn & Kramer 2011:198).

Semantic clarity ensures that the definitions of the concepts used provide meaningful understanding of the theory. A clear, well-written definition is important in order to provide semantic clarity. This means that irrespective of who reads the theory, they should ideally all have the same interpretation and understanding of the words used for the concept. A poor definition results in poor clarity.

The concepts in this theory were defined using both dictionary and literature sources. A conceptual definition was created to provide meaning for the concepts within the context of diagnostic radiography education. Relationship statements were created to further explain and provide meaning to the concepts. A conceptual map was created as a diagrammatic way of increasing the clarity of the concepts used. This diagram is self-explanatory and simple.

Semantic consistency ensures that the concepts are used accurately in the theory and are in keeping with the definitions that are provided. Once again when I reflected on the semantic consistency of my model, I felt that the concepts were used according to the definitions. The assumptions of the model are aligned with the definition of the concepts of the model. This shows consistency in my theory.

Structural clarity and semantic clarity are closely aligned. The connections used need to be understandable and easy to recognise. The structure of this model was represented graphically using simple shapes and structures. The written description of the model is simple to read and provides logical reasoning. Each element of the model's structure flows into the next and this provides better structural clarity.

Structural consistency is when the structures used in the theory are used consistently. The structure of a spiral was used in this model to depict the process of the theory. This is consistent with the concept of growth and development as this model is aimed at developing caring radiographers. I felt the structures used in this theory are structurally consistent.

5.5.2 Simplicity of the model

Chinn and Kramer (2011:201) explain that a theory is considered simple when there are minimal elements used in each descriptive category. In this theory a central concept was identified and then relationship statements were developed. These relationships were written as simple, easy-to-understand statements.

This model is intended to be operationalised within a higher education institution; therefore the simplicity of the model is important for its implementation. The guidelines provided have adequate information but they are still easy to understand. The model

was developed with the idea of being a straightforward and practical way of teaching caring. When I reflected on the simplicity of the model, I felt that this has been achieved.

5.5.3 Generalisability of the model

This refers to whether or not the theory can be applied to a broader range of situations. The purpose of this theory is to provide educators with a framework of reference to teach student diagnostic radiographers how to develop into caring professionals. Caring is considered a human trait which all people possess. In this way, the human element of this theory allows for greater generalisability.

Chinn and Kramer (2011:202) pose two questions: "to whom or what does the theory apply?" and "when does it apply?" The theory in this study applies to diagnostic radiography educators who will facilitate the teaching of caring to diagnostic radiography students and the theory also applies to diagnostic radiography students who are willing to learn and become caring professionals. It is applicable at the beginning or when students start their academic programme in radiography.

While the focus of this theory is on diagnostic radiography, I believe this model is general enough to be applied to the broader radiography profession. This model can easily be adapted to be applied to the different disciplines of radiography by simply using discipline-specific scenarios to teach humanistic patient interactions.

5.5.4 Accessibility of the model

This refers to the extent to which the indicators of the concepts can be identified and the aim of the theory achieved (Chinn & Kramer 2011:203). The definitions of the concepts are simple and depict accessibility of the model. In this theory student diagnostic radiographers will be taught how to be caring professionals. The definition of caring used in this study is as follows:

> *Caring is defined as an altruistic act of concern, compassion and empathy towards another individual without any discrimination. This can be demonstrated by human acknowledgement, genuine interest and respect.*

Based on this definition, caring is a behaviour which can be witnessed and observed in order to determine if the purpose of the theory was achieved. The guidelines to operationalise the model provide educators with the necessary tools to teach, monitor and assess this behaviour. Therefore I believe that this model is accessible and has the ability to bring about change among student diagnostic radiographers.

5.5.5 Importance of the model

This is based on a theory's relevance in practice. According to Chinn and Kramer (2011:204), an important theory is:

- forward looking
- useable in practice, education and research
- valuable for creating a desired future

This model is a proactive guide to develop a caring radiography professional starting with the first-year students. In this way the theory looks forward. The guidelines provided for the operationalisation of the model are practical and relevant to the clinical environment. The theory is thus useable in practice and education. Ultimately, it is anticipated that by developing caring values in students from the very beginning of their studies, this will one day create a caring radiography profession. In this way the theory is valuable for creating a desired future.

The concepts, definitions, purpose and assumptions of this model are grounded in practice, thus making this theory important. Additional questions posed by Chinn and Kramer are: "Do you like this theory? And why do you like this theory?" I reflected on these questions. My answers: Yes, I like this theory. The reason I like this theory is that it has the potential to bring about change to both diagnostic radiography education and the profession of radiography as a whole. When I engaged with the participants of this study, I was filled with joy to see the enthusiasm for this study. This gave me a sense of confidence that this model can be very useful when implemented. The passion and drive of the participants makes me want to carry this study through as a post-doctoral study to implement the model. They have motivated me throughout this

study. For me, based on the above, I believe this study is important and will make a difference to the profession both academically and clinically.

5.6 CONCLUSION

This chapter dealt with the development of the model which resulted from the findings of the focus group interviews conducted with first-year diagnostic radiography students. The participants showed a keen willingness to learn and grow in this profession. This model is aimed at providing diagnostic radiography educators with a framework to assist them in teaching students how to become caring professionals.

The model provides an easy-to-follow process, which can easily be implemented in practice. I believe that we can change the future of radiography and this starts by taking the first step towards acknowledging the possibility of change. I hope that diagnostic radiography educators will implement the guidelines described so that we can achieve a caring radiography profession one day and change the one-sided view of the profession. I would like to end this chapter with a poem on a saying that is near to my heart, namely "sharing is caring":

Sharing Is Caring - Poem by Patricia Grantham

To show you care for someone is to lend a helping hand
A need to be concerned for every woman, child and man
Share whatever you can to help someone in need
Then you will be happier and a better person indeed

When you share with others you unselfishly give of yourself
Then love is given freely instead of sitting on a shelf
Hands that are always clenched nothing can ever get out
Ones that are open and gives is what love is all about

Sharing is caring when given from the heart with pleasure
The good returns are many and the rewards are without measure
Goods given freely brings a smile to the needy person
Holding back when you can give will only continue to worsen

https://www.poemhunter.com/poems/caring/
2013

CHAPTER 6
CONCLUSION, CHALLENGES, RECOMMENDATIONS
AND ORIGINAL CONTRIBUTION

I learned that courage was not the absence of fear,
But the triumph over it.
The brave man is not he who does not feel afraid,
But he who conquers that fear.
Nelson Mandela

6.1 INTRODUCTION

This study aimed at generating a new theory based on teaching caring to first-year diagnostic radiography students. The purpose of this study was to develop a model to facilitate this teaching of caring to first-year diagnostic radiography students and then to develop and describe guidelines to operationalise this model. This chapter serves as a conclusion to the findings of the study and is a reflection on whether the aim was achieved. The challenges faced during the research process will also be discussed and recommendations for further research in diagnostic radiography education will be provided. Lastly, the research will be evaluated for its original contribution to the profession.

6.2 OVERVIEW OF THE RESEARCH PROCESS

This study was conducted using a qualitative, theory-generating research design. Appreciative inquiry was used as an interview tool to conduct the focus group interviews. A central concept was identified and a model to facilitate the teaching of caring to diagnostic radiography students was developed. This was achieved by using four steps.

The first step was a concept analysis to identify a central concept. This step had two phases. Phase 1 was focus group interviews to gain an understanding of what caring meant to first-year diagnostic radiography students. The 4D model of appreciative inquiry was used as an interview technique to explore participants' stories in a positive and meaningful manner. These interviews were held with 19 first-year diagnostic

radiography students in total. The interviews were audio-recorded and transcribed verbatim. During the data collection process I kept field notes which assisted in the data analysis phase. Data was analysed by means of themes and categories (Holloway & Wheeler 2010). Three major themes emerged from the data:

- ➢ Caring as an integral part of a career choice
- ➢ Unpreparedness for interpersonal interactions
- ➢ Barriers and enablers to the development of a caring identity

In order to identify a central concept for the model development, I was required to reflect on the main themes that emerged from the data as well as review my reflective field notes to gain a meaningful understanding of the stories shared. I used inductive reasoning to combine themes from specific stories that were shared with me. From their stories, it was evident that student radiographers needed some form of proper guidance for them to be able to become caring professionals. Upon reflection, I realised that the best way to produce caring radiographers was by creating and maintaining a culture of caring among diagnostic radiography students. Therefore the facilitation of a culture of caring became the central concept for the development of a model to facilitate the teaching of caring to first-year diagnostic radiography students.

In phase 2, the related concepts of facilitation, culture and caring were defined by means of dictionary and subject literature. Extracted from the definitions, essential attributes were also created. The survey list provided by Dickoff et al. (1968:422-435) was used to classify the defined concepts.

Step 2 entailed writing up relationship statements based on the defined concepts from step 1. In order to fully understand the identified concepts, their relationship with each other needed to be depicted. These relationship statements formed the basis of the initial conceptual model which served as a framework for the research.

Step 3 was the development and description of the model to facilitate the teaching of caring to first-year diagnostic radiography students. The structure of the model was developed and presented graphically. A written description of the model was also offered to provide meaning to the model.

In step 4 guidelines for the operationalisation of the model were developed as a method to assist diagnostic radiography educators with the implementation of this model. The guidelines were described as learning units and a workbook was developed to provide the educator with further guidance and easy implementation of the model process. The learning units covered were:

Learning unit 1a	Relationship building and learned optimism
Learning unit 1b	Understanding the different caring philosophies and learning a set of shared ideas, values and beliefs
Learning unit 2	Understanding a humanistic way of interacting with individuals and showing selfless concern, kindness and compassion
Learning unit 3	Understanding reflective practices
Learning unit 4	Demonstration of caring
Learning unit 5	Assessment of caring
Learning unit 6	Developing a caring identity

Chinn and Kramer (2011:197) pose questions for critical reflection as a way of evaluating the model. These questions were used to evaluate this model. Based on reflection, I felt this model achieved its purpose and met all necessary criteria.

In conclusion, the aim of this study was achieved as a model to facilitate the teaching of caring to first-year diagnostic radiography students was developed effectively and guidelines to operationalise the model were presented. The model has been critically evaluated and found to be important for use within the context of diagnostic radiography education. It is anticipated that if this model is implemented into a higher education institution, it has the potential to change the future of radiography by developing radiographers who are considered to be caring professionals that model a culture of caring.

6.3 CHALLENGES

Encountering challenges while conducting research is inevitable and these may be seen as limitations to the study. The challenges encountered during the research process of data collection and their impact on the study will be described below. In this study, however, there were not many challenges as the participants of this study were eager to share their stories.

6.3.1 Sample population and size

In keeping with qualitative research, this study is contextual in nature. Therefore, this study was conducted at only one higher education institution. Including other institutions would have allowed for greater generalisability of the research findings. However, due to the nature of the study being contextual, this was deemed unnecessary. Nonetheless, the sample size could be considered as a limitation of the study.

Despite this, the focus group interviews were conducted with first-year diagnostic radiography students, all with different backgrounds and upbringings. This diversity allowed for a less restricted and better understanding of the phenomenon of caring. Participants were able to share personal, real-life stories of what caring meant to them. The participants of this study included students that were training at both private and public health sectors, which allowed for an overall understanding of caring from both the clinical environments. To allow for easy transferability of the research findings, a dense description of the data collection process was provided. The themes that emerged from the data were supported with literature from other studies with similar findings. This additionally allows for better transferability to other settings.

The participants of this study provided me with information-rich data that added considerable value to this research. Participants volunteered and sacrificed their time to be a part of this study. They were beaming with enthusiasm and willingness to share their stories. While the number of students that participated in this study may be considered to be a limitation of the study, the concept of data saturation was taken into account. In qualitative studies data saturation is considered to be more important

than the sample size. I was satisfied that I had reached data saturation by the end of the last set of focus group interviews.

6.3.2 Suitable time

The participants of this study were student diagnostic radiographers. As is normal for diagnostic radiography students within a South African context, they rotate between attending lectures and completing the WIL at different intervals throughout the year. The data collection for this study took place towards the end of the year and was closer to the assessment time for students. Arranging a suitable time that was convenient for all participants did consequently pose a slight challenge.

This challenge was, however, overcome by communicating effectively with the class representative for the first-year students. The class representative had sent me their timetables and met with me to arrange possible dates and times which she felt would be convenient for the class as a whole. These options were then sent to the students and in a matter of a few days the time slots were quickly filled. Having the interviews on the same campus where the participants attended lectures was an advantage as students were able to participate either before or after classes. This ensured that students did not have any additional travel costs.

6.4 RECOMMENDATIONS FOR RADIOGRAPHY EDUCATION, RADIOGRAPHY PRACTICE AND RADIOGRAPHY RESEARCH

Based on the study findings and my own personal reflection, recommendations for diagnostic radiography education, practice and research are made below.

6.4.1 Radiography education

Radiology is a vital department within the clinical environment and diagnostic radiography forms an integral part of the healthcare system. Diagnostic radiography education can no longer be one-sided, focusing only on the technical aspects of the profession. There is now a need for diagnostic radiography to be a combination of both technical knowledge and the critical human interaction skills such as caring. In order to achieve this, it is recommended that radiography educators facilitate the teaching

of caring to diagnostic radiography students as this is an aspect that is currently lacking.

Diagnostic radiography is slowly moving towards a more patient-centred environment and this requires student radiographers to be equipped with the skills necessary for their daily interactions with patients. It is highly recommended that radiography educators implement the guidelines provided in this study in order to operationalise the research model described. This model can easily be implemented into all years of the radiography programme. This research model provides a proactive approach to teaching caring through the development of a culture of caring prior to the student's first encounter with patients. The values and beliefs of a culture of caring will be developed in the student and will allow them to be caring professionals from the very beginning of their career.

 A social constructivist teaching philosophy underpinned the implementation of the model process. In keeping with social constructivism, it is recommended that radiography educators engage with their creative side to develop more realistic, relevant scenarios, which will help students to cope better with the reality of the clinical environment. It is recommended that radiography educators use authentic teaching methods such as simulation-based teaching, role-playing exercises, reflective learning and peer discussions. These approaches allow for shared learning among students. Students can be given an opportunity to develop their own understanding of different concepts.

6.4.2 Radiography practice

The clinical rotations in the form of WIL provide students with a platform to apply their theory in a more practical manner. According to literature, diagnostic radiography is often viewed as a cold profession in which some diagnostic radiographers view patients simply as objects or numbers waiting to be imaged. Such an approach can no longer be accepted. The human element of caring for patients is crucial in radiography practice.

The clinical practice should be an environment that supports and promotes the development of caring radiographers.   Clinical radiographers need to be reminded of

the role they play in a student's learning journey. Students view their seniors as role models and people they aspire to emulate. Qualified radiographers should be conscious of their actions and cognisant of the influence they have on students. In this way, they will be setting a good example for students who will rotate through those practices.

6.4.3 Radiography research

Diagnostic radiography is a profession that is constantly advancing in terms of improved technology, image acquisition and image quality. Radiography research is necessary for the improvement of radiography practice. Radiography educators should encourage students to engage in research from early on in order to grow the research community within diagnostic radiography.   The research model developed in this study can be operationalised as a possible topic for a master's study.

This model should also be considered for its transferability to other disciplines in radiography, namely radiotherapy, ultrasound and nuclear medicine.

6.5 ORIGINAL CONTRIBUTION OF KNOWLEDGE TO DIAGNOSTIC RADIOGRAPHY PROFESSION

While numerous studies have been conducted in diagnostic radiography on equipment, radiation protection and patient care, these studies have failed to achieve two aspects which I believe my study has dealt with successfully:

- Firstly, the lack of studies on gaining an understanding of caring from a diagnostic radiography student's perspective
- Secondly, the lack of focus on the teaching of the concept of caring to diagnostic radiography students

This research model is an original contribution to the profession of diagnostic radiography education as there is no model currently available within a South African context to facilitate the teaching of caring to diagnostic radiography students. This model is an attempt to fill this gap in research. This research study also used

appreciative inquiry as an interview tool to focus on the phenomenon in a more positive manner. While the use of appreciative inquiry is increasing, I have not found any research using this tool among diagnostic radiography students. This adds to the original contribution to research within radiography.

6.6 CONCLUSION

This chapter concludes with the aim of this study, which was to develop a model to facilitate the teaching of caring to diagnostic radiography students, having been achieved. This model provides a simple, practical guide to teaching caring to students in a meaningful way that will allow them to develop a culture of caring that will be part of them as individuals. Student radiographers have the potential and willingness to grow and learn. Educators should harness this potential as a way to cultivate and create caring identities among student radiographers. I believe that if this model is implemented, it has the potential to change the current radiography environment from one of technical focus to one of a patient-centred caring environment. When I set out on this journey, I questioned whether there was any hope for bringing about change. Now that I have completed this journey, I believe that change is possible. The poem by Rudyard Kipling "The explorer" is an inspirational poem which I would like to share with the reader, my participants and fellow researchers.

The Explorer

Rudyard Kipling

1898

"There's no sense in going further -- it's the edge of cultivation,"
So they said, and I believed it -- broke my land and sowed my crop --
Built my barns and strung my fences in the little border station
Tucked away below the foothills where the trails run out and stop:

Till a voice, as bad as Conscience, rang interminable changes
On one everlasting Whisper day and night repeated -- so:
"Something hidden. Go and find it. Go and look behind the Ranges --
"Something lost behind the Ranges. Lost and waiting for you. Go!"

So I went, worn out of patience; never told my nearest neighbours --
Stole away with pack and ponies -- left 'em drinking in the town;
And the faith that moveth mountains didn't seem to help my labours
As I faced the sheer main-ranges, whipping up and leading down.

March by march I puzzled through 'em, turning flanks and dodging shoulders,
Hurried on in hope of water, headed back for lack of grass;
Till I camped above the tree-line -- drifted snow and naked boulders --
Felt free air astir to windward -- knew I'd stumbled on the Pass.

'Thought to name it for the finder: but that night the Norther found me --
Froze and killed the plains-bred ponies; so I called the camp Despair
(It's the Railway Gap to-day, though). Then my Whisper waked to hound me: --
"Something lost behind the Ranges. Over yonder! Go you there!"

Then I knew, the while I doubted -- knew His Hand was certain o'er me.
Still -- it might be self-delusion -- scores of better men had died --
I could reach the township living, but....e knows what terror tore me...
But I didn't... but I didn't. I went down the other side.

Till the snow ran out in flowers, and the flowers turned to aloes,
And the aloes sprung to thickets and a brimming stream ran by;
But the thickets dwined to thorn-scrub, and the water drained to shallows,
And I dropped again on desert -- blasted earth, and blasting sky....

I remember lighting fires; I remember sitting by 'em;
I remember seeing faces, hearing voices, through the smoke;
I remember they were fancy -- for I threw a stone to try 'em.
"Something lost behind the Ranges" was the only word they spoke.

I remember going crazy. I remember that I knew it
When I heard myself hallooing to the funny folk I saw.
'Very full of dreams that desert, but my two legs took me through it...
And I used to watch 'em moving with the toes all black and raw.

But at last the country altered -- White Man's country past disputing --
Rolling grass and open timber, with a hint of hills behind --
There I found me food and water, and I lay a week recruiting.
Got my strength and lost my nightmares. Then I entered on my find.

Thence I ran my first rough survey -- chose my trees and blazed and ringed 'em --
Week by week I pried and sampled -- week by week my findings grew.
Saul he went to look for donkeys, and by God he found a kingdom!
But by God, who sent His Whisper, I had struck the worth of two!

Up along the hostile mountains, where the hair-poised snowslide shivers --
Down and through the big fat marshes that the virgin ore-bed stains,
Till I heard the mile-wide mutterings of unimagined rivers,
And beyond the nameless timber saw illimitable plains!

'Plotted sites of future cities, traced the easy grades between 'em;
Watched unharnessed rapids wasting fifty thousand head an hour;
Counted leagues of water-frontage through the axe-ripe woods that screen 'em --
Saw the plant to feed a people -- up and waiting for the power!

Well, I know who'll take the credit -- all the clever chaps that followed --
Came, a dozen men together -- never knew my desert-fears;
Tracked me by the camps I'd quitted, used the water-holes I hollowed.
They'll go back and do the talking. *They'll* be called the Pioneers!

They will find my sites of townships -- not the cities that I set there.
They will rediscover rivers -- not my rivers heard at night.
By my own old marks and bearings they will show me how to get there,
By the lonely cairns I builded they will guide my feet aright.

Have I named one single river? Have I claimed one single acre?
Have I kept one single nugget -- (barring samples)? No, not I!
Because my price was paid me ten times over by my Maker.
But you wouldn't understand it. You go up and occupy.

Ores you'll find there; wood and cattle; water-transit sure and steady
(That should keep the railway rates down), coal and iron at your doors.
God took care to hide that country till He judged His people ready,
Then He chose me for His Whisper, and I've found it, and it's yours!

Yes, your "Never-never country" -- yes, your "edge of cultivation"
And "no sense in going further" -- till I crossed the range to see.
God forgive me! No, *I* didn't. It's God's present to our nation.
Anybody might have found it, but -- His Whisper came to Me!

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Appendix A

UNIVERSITY
OF
JOHANNESBURG

FACULTY OF HEALTH SCIENCES

RESEARCH ETHICS COMMITTEE
NHREC Registration no: REC-241112-035

REC-01-118- 2017

9 October 2017

TO WHOM IT MAY CONCERN:

STUDENT:	NAIDOO, K
STUDENT NUMBER:	201705934

TITLE OF RESEARCH PROJECT: A Model to Facilitate the Teaching of Caring to Diagnostic Radiography Students at a Higher Education Institution

DEPARTMENT OR PROGRAMME: MEDICAL IMAGING AND RADIATION SCIENCES

SUPERVISOR: Dr H Lawrence   CO-SUPERVISOR: Prof C Stein

The Faculty Research Ethics Committee has scrutinised your research proposal and confirm that it complies with the approved ethical standards of the Faculty of Health Sciences; University of Johannesburg.

The REC would like to extend their best wishes to you with your postgraduate studies.

Yours sincerely,

Prof N Houreld
Vice Chair : Faculty of Health Sciences REC
Tel: 011 559 6564
Email: cstein@uj.ac.za

Appendix B

FACULTY OF HEALTH SCIENCES

HIGHER DEGREES COMMITTEE

HDC-01-72- 2017

9 October 2017

TO WHOM IT MAY CONCERN:

STUDENT: NAIDOO, K
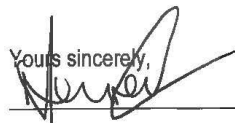STUDENT NUMBER: 201705934

TITLE OF RESEARCH PROJECT: A Model to Facilitate the Teaching of Caring to Diagnostic
                                Radiography Students at a Higher Education Institution

DEPARTMENT OR PROGRAMME: MEDICAL IMAGING AND RADIATION SCIENCES

SUPERVISOR: Dr H Lawrence   CO-SUPERVISOR: Prof C Stein

The Faculty Higher Degrees Committee has scrutinised your research proposal and concluded that it
complies with the approved research standards of the Faculty of Health Sciences; University of
Johannesburg.

The HDC would like to extend their best wishes to you with your postgraduate studies

Yours sincerely,

Prof BS Shaw

Chair: Faculty of Health Sciences HDC

Tel: 011 559 6891

Email: brandons@uj.ac.za

Appendix C

Faculty Permission

From: Fourie, Cornelius
Sent: Thursday, August 24, 2017 10:30:39 AM
To: Lawrence, Heather
Cc: Naidoo, Kathleen; Stein, Christopher
Subject: RE: Permission for a Doctoral proposal

Dear Dr Lawrence

Once all required permissions are granted by the faculty, the student may continue with his/her planned research.

Regards

Prof C.M. (Neels) Fourie
Division for Institutional Planning, Evaluation and Monitoring (DIPEM)
Tel: +27 11 559 2093
Email: nfourie@uj.ac.za

From: Lawrence, Heather
Sent: 24 August 2017 10:28 AM
To: Fourie, Cornelius <nfourie@uj.ac.za>
Cc: Naidoo, Kathleen <kathleenn@uj.ac.za>; Stein, Christopher <cstein@uj.ac.za>
Subject: Permission for a Doctoral proposal

Dear Prof Fourie,

I would like to request permission for a Doctoral candidate in the Medical Imaging and Radiation Sciences Department to recruit students from the 1st year medical imaging student body to participate in focus group interviews. The interviews will most likely take place in November of this year. The candidates proposal is attached and will serve at the Higher Degrees and Research Ethics Meetings of the Health Sciences faculty in September.

Kind regards,

Dr Heather Lawrence

Senior lecturer: Medical Imaging and Radiation Sciences Department (MIRS)
Faculty Of Health Sciences

Office: John Orr Building, JOB 6306e
Tel +27 11 559 6887
Fax +27 11 556 6778

www.uj.ac.za

Department of Medical Imaging and Radiation Sciences Permission

From: Mdletshe, Sibusiso
Sent: Tuesday, October 10, 2017 2:46:55 PM
To: Naidoo, Kathleen
Cc: Casmod, Yasmin; Hazell, Lynne; Bhyat, Fatima; Chipeya, Lucky
Subject: RE: permission to conduct research

Dear Mrs Naidoo
Your request is noted and supported. Kindly liaise with the relevant programme coordinators to make arrangements to collect your data.

Kind regards.....

Mr Sibusiso Mdletshe
HOD : Medical Imaging and Radiation Sciences Department (MIRS)
Faculty Of Health Sciences
Office: John Orr Building, JOB 6304b
Tel +27 11 559 6066
Cell +27 84 702 2517
Fax +27 86 570 8702
Alt email: sibusisomdletshe@yahoo.com
Personal Website: http://sibusisom.wix.com/portfolio

www.uj.ac.za

From: Naidoo, Kathleen
Sent: 09 October 2017 01:40 PM
To: Mdletshe, Sibusiso <sibusisom@uj.ac.za>
Subject: permission to conduct research

Dear Mr M,

Please find attached letter to request permission to conduct research in the Department of Medical Imaging and Radiation Sciences. My proposal has been accepted by both HDC and REC.
I trust I will get your full support in this regard.

Kind regards,

Kathleen Naidoo

Appendix D

UNIVERSITY
OF
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DEPARTMENT OF MEDICAL IMAGING AND RADIATION SCIENCES

RESEARCH STUDY INFORMATION LETTER

August 2017

Good Day

My name is Kathleen Naidoo **I WOULD LIKE TO INVITE YOU TO PARTICIPATE** in a research study on *A MODEL TO FACILITATE THE TEACHNG OF CARING TO DIAGNOSTIC RADIOGRAPHY STUDENTS AT A HIGHER EDUCATION INSTITUTION*

Before you decide on whether to participate, I would like to explain to you why the research is being done and what it will involve for you. **I will go through the information letter with you and answer any questions you have.** This should take about 15 to 20 minutes. The study is part of a research project being completed as a requirement for a DTech Degree in Radiography through the University of Johannesburg.

THE PURPOSE OF THIS STUDY is to: explore and describe the concept of caring in order to develop a model to facilitate the teaching of the concept of caring to first year diagnostic radiography students.

Below, I have compiled a set of questions and answers that I believe will assist you in understanding the relevant details of participation in this research study. Please read through these. If you have any further questions I will be happy to answer them for you.

DO I HAVE TO TAKE PART? No, you don't have to. It is up to you to decide to participate in the study. I will describe the study and go through this information sheet. If you agree to take part, I will then ask you to sign a consent form.

WHAT EXACTLY WILL I BE EXPECTED TO DO IF I AGREE TO PARTICIPATE? Should you choose to participate in my study; you will be asked to share your understanding of caring. This will be done in the form of in-depth focus group interviews. I cannot ensure confidentiality by group participants, but only request that they keep the discussion confidential. The interview will be 45-60 minutes long and will be audio-taped which will allow me to accurately reflect on what was said during the interview. You will be requested to give permission for the audio-taping on a different consent form. In this research study, there will be no financial gain or direct benefit to you as the participant, however, it is anticipated that this study will benefit the radiography profession as a whole.

WHAT WILL HAPPEN IF I WANT TO WITHDRAW FROM THE STUDY? If you decide to participate, you are free to withdraw your consent at any time without giving a reason and without any consequences. If you wish to withdraw your consent, you must inform me as soon as possible. However, data collected until the time of withdrawal will be retained by the researcher since no names will be used during the focus group interviews. Therefore, audio-taped data will remain anonymous and the researcher will be unable to identify the contribution made by the particular participant. The data will be destroyed 2 years after publication of the research.

IF I CHOOSE TO PARTICIPATE, WILL THERE BE ANY EXPENSES FOR ME, OR PAYMENT DUE TO ME:

You will not be paid to participate in this study and you will not bear any expenses.

RISKS INVOLVED IN PARTICIPATION: There are no anticipated risks to participants involved in this study.

BENEFITS INVOLVED IN PARTICIPATION: There are no direct benefits to you as a participant; however, the benefits of participating in the study will give you a chance to share your experiences with other students. Also, you will be given an opportunity to help me gain valuable insight into your understanding of caring, which will in turn assist in better facilitation and teaching of caring to radiography student's. I am hoping that this will lead to an enhanced educational experience for future students and will impact positively on our profession as a whole.

WILL MY PARTICIPATION IN THIS STUDY BE KEPT CONFIDENTIAL? Yes. Names during the interview will not be captured on the data sheet. All data and back-ups thereof will be kept in password protected folders and/or locked away as applicable. Only I or my research supervisor will be authorised to use and/or disclose your anonymised information in connection with this research study. Any other person wishing to work with your anonymised information as part of the research process (e.g. an independent data coder) will be required to sign a confidentiality agreement before being allowed to do so.

WHAT WILL HAPPEN TO THE RESULTS OF THE RESEARCH STUDY? The results will be written into a research report that will be assessed. In some cases, results may also be published in a scientific journal. In either case, you will not be identifiable in any documents, reports or publications. You will be given access to the study results if you would like to see them, by contacting me.

WHO IS ORGANISING AND FUNDING THE STUDY? The study is being organised by me, under the guidance of my research supervisor at the Department of Medical Imaging and Radiation Sciences in the University of Johannesburg. The study has not received any funding.

WHO HAS REVIEWED AND APPROVED THIS STUDY? Before this study was allowed to start, it was reviewed in order to protect your interests. This review was done first by the Department of Medical Imaging and Radiation Sciences, and secondly by the Faculty of Health Sciences Higher Degrees and Research Ethics Committees at the University of Johannesburg. In both cases, the study was approved.

WHAT IF THERE IS A PROBLEM? If you have any concerns or complaints about this research study, its procedures or risks and benefits, you are welcome to request clarification at any time during the research process.

My contact details are:

Kathleen Naidoo

Tel: 0115596351

Email: kathleenn@uj.ac.za

You may also contact my research supervisor:

Dr. H. Lawrence

Tel: 0115596887

Email: heatherl@uj.ac.za

If you feel that any questions or complaints regarding your participation in this study have not been dealt with adequately, you may contact the Chairperson of the Faculty of Health Sciences Research Ethics Committee at the University of Johannesburg:

Prof. Marie Poggenpoel

Tel: 011 559-6686

Email: mariep@uj.ac.za

FURTHER INFORMATION AND CONTACT DETAILS: Should you wish to have more specific information about this research project information, have any questions, concerns or complaints about this research study, its procedures, risks and benefits, you should communicate with me using any of the contact details given above.

Researcher:

Kathleen Naidoo

UNIVERSITY OF JOHANNESBURG

DEPARTMENT OF MEDICAL IMAGING AND RADIATION SCIENCES

RESEARCH CONSENT FORM

A MODEL TO FACILITATE THE TEACHING OF CARING TO DIAGNOSTIC RADIOGRAPHY STUDENTS AT A HIGHER EDUCATION INSTITUTION

Please initial each box below:

☐   I confirm that I have read and understand the information letter dated August 2017 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

☐   I understand that my participation is voluntary and that I am free to withdraw from this study at any time without giving any reason and without any consequences to me.

☐   I agree to take part in the above study.

_____   _____   _____

Name of Participant   Signature of Participant   Date

_____   _____   _____

Name of Researcher   Signature of Researcher   Date

DEPARTMENT OF MEDICAL IMAGING AND RADIATION SCIENCES

RESEARCH CONSENT FORM FOR INTERVIEWS TO BE AUDIO-TAPED

A MODEL TO FACILITATE THE TEACHING OF CARING TO DIAGNOSTIC RADIOGRAPHY STUDENTS AT A HIGHER EDUCATION INSTITUTION

Please initial each box below:

☐   I hereby give consent for my interview, conducted as part of the above study, to be audio-taped.

☐   I understand that my personal details and identifying data will be changed in order to protect my identity. The audio tapes used for recording my interview will be destroyed two years after publication of the research.

☐   I have read this consent form and have been given the opportunity to ask questions.

_____   _____   _____

Name of Participant   Signature of Participant   Date

_____   _____   _____

Name of Researcher   Signature of Researcher   Date

Appendix E

UNIVERSITY OF JOHANNESBURG

CONFIDENTIALITY AGREEMENT – TRANSCRIBER

I, _JACQUELINE HLABANGANE_ hereby declare that I understand and agree to the following conditions with regards to the transcription of the audio recordings.

1. I understand that the audio recordings are received for the purpose of transcribing records of interviews held with the participants in a research study.
2. I undertake to treat all audio tapes received as confidential content to which only I will have access. I will keep the audio tapes and any copied material securely in a locked cupboard.
3. I will return all copies back to the researcher on completion of the transcription

NAME: _JACQUELINE_

SIGNATURE: _(signature)_

DATE: _09 | 11 | 2017_

Appendix F

<u>Examples/ Extracts from the transcribed data of the focus group interviews</u>

Participant 4	Mhhh… for me being a radiographer means mmm ahhh caring for other people's needs and actually being respectful towards the other patients like what u said that patients becomes a number, in order to prevent that I tend to always ask them how the day has been, like when they started getting sick, what happened and all that and listen to their stories…
Interviewer	Yes
Participant 4	I get one patient to start talking like about 30 minutes about how like a surname and…
Interviewer	Yes
	Laughter from other participants
Participant 4	…how unique it is and but ja… but will like to want to interrupt her, like…
	Laughter
Participant 4	…I will like let's get this done, like I know as a radiographer it is more respectful to listen to their story and I've had so many patients come up to me and say thank you to be so kind to me, thank you for caring for me and…*(was interrupted by the Interviewer)*
Interviewer	How does it make you feel D when a patient actually says, thank you?
Participant 4	Like it actually makes me feel human because…because a lot of patients just wanna get… just wanna get over and done with

Interviewer	Yes
Participant 4	…they just completely ignore you. When they actually say thank you it makes me feel, I've changed someone life, like I've done something for someone *(laughing)*
Interviewer	X…will get a chance for yourself. D you can continue and finish what you are saying.
Participant 4	Ja… and mmm, I have also had patients who were saying your parents must have been very proud
Interviewer	Mmm…
Participant 4	… and like is mostly elderly patients because they tend to be more kind too than…
Interviewer	Ok, and you think those kind of events change you as a person.
Participant 4	Yes…
Interviewer	Or the way you treat future patients
Participant 4	Yes the do, definitely they, they make me feel more confident and they make me feel like I am actually making a difference rather than just being someone walking up and down and pressing a button. I'm actually changing someone's life, and that's the reason why I want to become radiographer is because I want to help people, especially with my dad and all that with him being sick and all that so I actually want to give back to society because society has given me so much.
Interviewer	You have a personal… you have been impacted personally so you are changing want to make a difference
Participant 4	Yes
Interviewer	Okay, fantastic, yes M

Participant 1	I kinda, from what R and D was saying. As much as you say, you want to feel more human when your patients talk to you, I find it easier to still care; because I was saying while you guys were talking I had a one year old who almost drowned and we had to do chest X-ray, and yes I cared for that child and look after that child properly but at the end of the day you know I was just almost a bystander in that situation and it was better to be a bystander than to get overly emotionally involved because when you do that haunt you
Participant 3	I'm not saying….
Participant 1	…no…no but what I'm saying is I still have nightmares about that little girl, about hearing her cry, while her mom was holding her, having her mom cried. I have had that permanently burned into my brain , I remember afterwards I had probably about 5 minutes before my next patient and I had somebody come up to me, and they are like *"are you okay, how does this affect you?"* And I necessarily didn't wanna talk about how it negatively affected me. It doesn't mean I didn't care.
Interviewer	Mmmm…
Participant 1	… I just didn't want to let it get caught…*(interrupted by interviewer)*
Interviewer	So you saying is like coping mechanism…
Participant 1	Yes

Participant 1	Aa…well for me, I will carry on with the same ahhh not the same, the same speed I have not to rush, to do what is right. That's the, that's one of the ethical principles that say always do what is right. so once you rushing you start doing wrong things. So, even if I'm a qualified, I'm a chief or I'm a radiologist always

	do what is right. Apply that ahhh that principle, in your life do what is right everyday
Interviewer	Okay, L, would you like to just add something for us on how you will describe the ideal caring radiographer?
Participant 5	Mhhh I think mhhh radiographers they need time more than everything and as the student like you somehow need to adapt their pace of working and ehhh sometimes it doesn't correspond cause they are some of the things that you need to be taught how to perform and it usually takes some time to actually get to the best and I probably think that if radiographers would ehhh apply that ethical principles each now and then into their work, they will probably realize that valuing time more than patients' life it's, it doesn't balance unless you have planned and organized your work effectively according to each individual it does work to some of the people
Interviewer	Ok, great, now that you mentioned how you see the future of the radiographer as an ethical person, what do you think you will need as students in order to be the ethical person, what do you need. What skills would you need?
Participant 2	I feel like it all also mhhh it all goes boils down to what we all learned here, firstly, because mhhh the more for example there are things that they emphasize here the things that we emphasize, that will be known in the department itself so when UJ tells us or teaches us how to do the chest X-ray, then there is certain things that they emphasize in a process and when we get to the departments remember that, you think about, oh…ja, they said mhhh you know you have to a center here , do this, do that I think if we can at UJ if they can emphasize mhhh on what's a caring radiographer is, should be compassionate, to be like she said and to mhhh you know mhhh care about the

	patients to, if we can learn that here it would be most probably to mhhh able to do it….*(interrupted by interviewer)*
Interviewer	As you process, a set process…
Participant 2	Yes…
Interviewer	… so when you go there you can always implemented it, is that what you saying…
Participant 2	Yes, and if we can mhhh look to the people that are teaches us and the people in the department, they actually cares about the patients because they all caring radiographers as well and if we can look at what they are doing and mhhh so that they can be our role models then so I think it will be also easier for us because we constantly exposed to a qualified radiographers that aren't caring, we are not gonna know what it is to actually care. We have to see people caring for each other in order to feel like okay I want to do this as well mhhh because look how, look at the outcome of that. So, I feel like education here ehhh is the emphasize that you will definitely try our best to do it out there and mhhh if there is, if for example in the mhhh evaluations that we do, we do the chest evaluation, the assessments when they come to our practices and if they see that we don't care for the patients and they have to penalize us because that's the only way they gonna force us, I mean not that you have to be forced but
Interviewer	I completely understand what you saying, so it should be like an assessment outcome, it get instilled in you
Participant 2	Yes, that's perfect, yes so if we can then, yes so is like mhhh, that's one thing that, one of the aspect that they are assessing us on, is caring for your patient, did you ask you patient mhhh how they are, did you mhhh assist your patient in moving from a

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	chair to the bed, did you do this, did you do that and in this, we will obviously put more mhhh attention to that…

Participant 5	Mhhh I feel like everything works with experience I mean at this moment we don't have as much experience as like the second years or the third years or the qualifieds itself so I feel mhhh as we growing we learn through observational learning basically so I mean what we see is we can either gain from it or lose from it so you can decide whether you wanna implement what you see on your patient mhhh let's say a qualified is doing something and if you see that's good or bad and you can decide whether to take that for your own learning, do you know what I mean. So I feel that, I think is just with experience
Interviewer	Mhhh in terms of what we do here at campus in terms of teaching, how do you think we can teach you to be caring? What ways can we use? Methods…
Participant 5	Mhhh I think a lot of like practical work is good cause people turn to remember pictures more than words if it makes sense, so, we do go to the clinic and we have presentations where we need to do role plays and often those kind of things that's where people remember you know I feel ahhh more practical work
Interviewer	Okay in terms of practical role playing how would you use that for caring, what way do you think we can use role playing for caring?

Participant 5	Okay for example, okay we actually has to do a presentation on professionalism for one of our subjects so mhhh our group ehhh we did two scenarios where there is a patient and a radiographer there was like a bad radiographer and good radiographer so we divided the two role players and people could distantly see the way radiographer should portray their actions and how they should be treating patients
Interviewer	So you think is important for us to show both sides so that someone can consciously say that's bad and that's good and you can choose which one, which is a good one. Okay, I get you S, would you like to give me anyways we can achieve this?
Participant 4	Mhhh okay
Interviewer	Do you need more time to think?
Participant 4	Ja…
Interviewer	Okay
Participant 3	Ahhh my thinking says, is ahhh we have something calls diagnostic clinically practice as she was talking about it but I feel like, it will be good sometime cause as people we've ehhh what we think is not the same so maybe once in a week or once a month ehhh clinical practice module we can have some sort of a bioscope, a bioscope is like a role play that we watching and see
Interviewer	Ohh like a video?
Participant 3	Like a video, projected towards and then we as the students we just sit down and watch the video, what's happening there and everything and then after when we done we just write what we saw, what they did wrong, what was happening that was good and what did you notice. And that's where maybe our lecturers will see that or sometimes student think like this sometimes some think like this and that's where we start the work

Interviewer	So, the video will be like a normal situation, a clinical situation where a patient come to the radiographer assisting to do the X-ray
Participant 3	Yes mam
Interviewer	And then students have to discuss what they noticed or what they learnt from it…
Participant 3	What they liked, what is similar to whatever they see every day, things like that

Appendix G

FIELD NOTES

FOCUS GROUP INTERVIEW 1

<u>LOGISTICS:</u>

The interview was conducted in the MIRS department boardroom. The door was closed for privacy and a sign was put on the door indicating interviews in progress. This was to ensure no disturbances or interruptions. The venue was a good venue as there was no external noise. It was a big venue for just 6 people and to pass the audio recorder around but overall it worked well. Coffee and snacks were provided for the participants.

<u>OBSERVATIONAL NOTES:</u>

Initially the participants were a bit nervous but as we started, talking the mood changed very quickly and become more light-hearted. Participants were very willing and open to sharing their stories and experiences. The overall atmosphere was comfortable, jovial and relaxed. There were even moments of laughter.

<u>PERSONAL NOTES:</u>

At the start, I was a bit stiff and maybe a bit nervous that I might leave out important information but once the participants started talking, I also became more at ease. One challenge for me was not sharing my own personal experiences with the participants. For future interviews I need to paraphrase less and try to keep my comments more neutral. I also need to pay more attention to passing the recorder around. I was very impressed with the participant's level of understanding and their ideas for improving teaching. The participants acknowledgement for the level of caring was admirable.

<u>METHODOLOGICAL NOTES:</u>

The appreciative inquiry technique worked very well for these interviews. It allowed the participants to reflect and think about moments that made them feel good and why they chose the profession. The audio recorder was passed around to allow good audio quality and this worked quite well. The questions were printed out in large on 4 sheets of paper which allowed the participants to have an idea of what to expect. This all worked well.
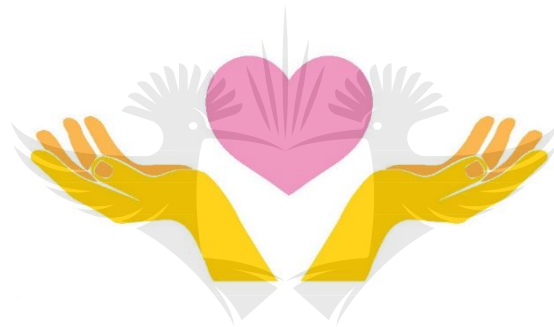
<u>THEORETICAL NOTES:</u>

Answers from the participants seem to be more inclined to the following theories:

- Human caring and altruistic behaviour
- Impact of role models
- Real life scenarios as a method for teaching

Appendix H

Workbook to teach caring

To

First year diagnostic student radiographers

Created by: Kathleen Naidoo

Table of Contents

PURPOSE OF THE WORKBOOK

The purpose of this workbook is to provide educators with guidelines to be able to facilitate the teaching of caring to diagnostic radiography students. These guidelines are a recommendation only and educators may adapt these activities to suit their teaching environment. The outcome of this book is to be able to achieve a culture of caring amongst students. This workbook provides an easy to follow, practical guide for the implementation of this concept. Within this workbook there are different learning units along with their outcomes, content and assessment techniques available. Practical, realistic examples, tools and exercises are described within a diagnostic radiography context. These are aligned to a social constructivist teaching philosophy.

This booklet is intended for a first year level student however; the level of complexity of teaching activities, scenarios and assessment tools may be adapted for higher levels of studies. Examples of these cases are also provided at the end.
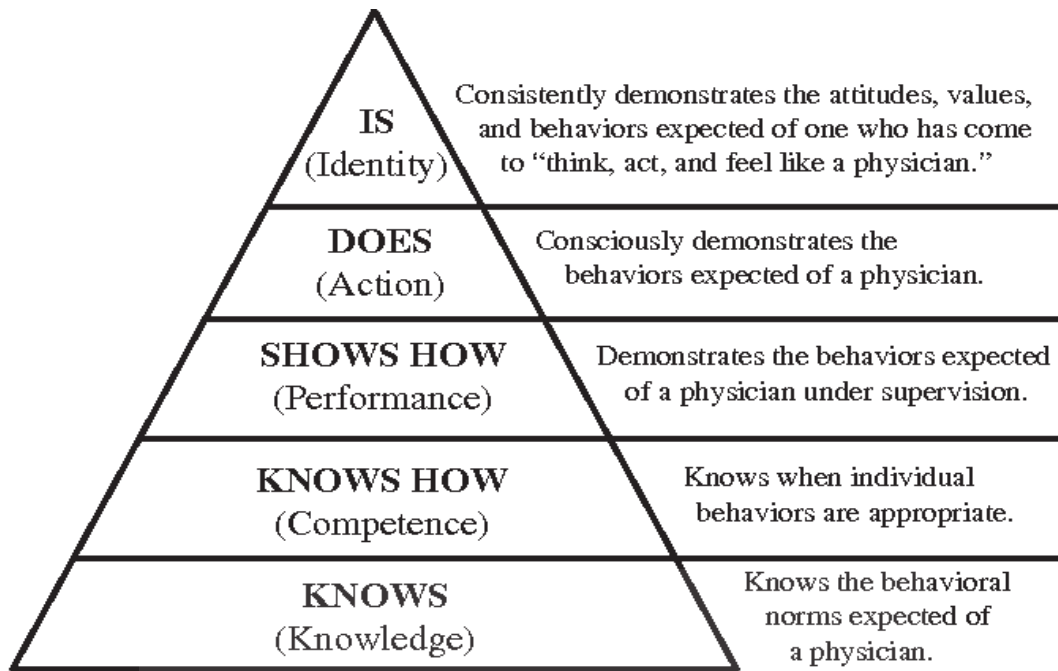
LEARNING CONCEPT: A CULTURE OF CARING

The aim of this learning concept is to facilitate the development of a culture of caring amongst student radiographers. This learning concept will be achieved through the delivery of 6 learning units. The goal of this culture of caring will be for students to:

- have a good understanding of caring through the development of a set of shared ideas, beliefs and values
- the development of a humanistic way of interacting with individuals
- the development of selfless concern, kindness and compassion.

Students will be able to incorporate this culture of caring into their subsequent levels of the degree programme.

The teaching philosophy

The teaching philosophy guiding the implementation of the content in this workbook is the social constructivist approach with each learning unit is aligned to the amended version of Millers pyramid of the assessment of clinical competence/skills/performance. Social constructivists believe that the student's reality shapes their learning and knowledge development (Andang Suhendi & Purwarno, 2018:92). This philosophy focuses on collaborative work and considers learning to be a social process (Har 2013:1, University College of Dublin n.d; Amineh & Asl 2015:13). Vygotsky's work suggests that knowledge is developed in a social context first, then internalized and applied by the individual (Moskal, Loke & Hung 2016:446; Adam 2017:3). Miller's pyramid is a well-known tool used extensively to develop and create learning programs. Researchers however felt that there was a need to add another level "IS" to the original pyramid as they considered professional presence as a vital concept in medicine and healthcare (Cruess, Cruess & Steinert 2016).   This level of "IS" is in keeping with the professional behavioral changes and softer skills development which are necessary for diagnostic radiography students.
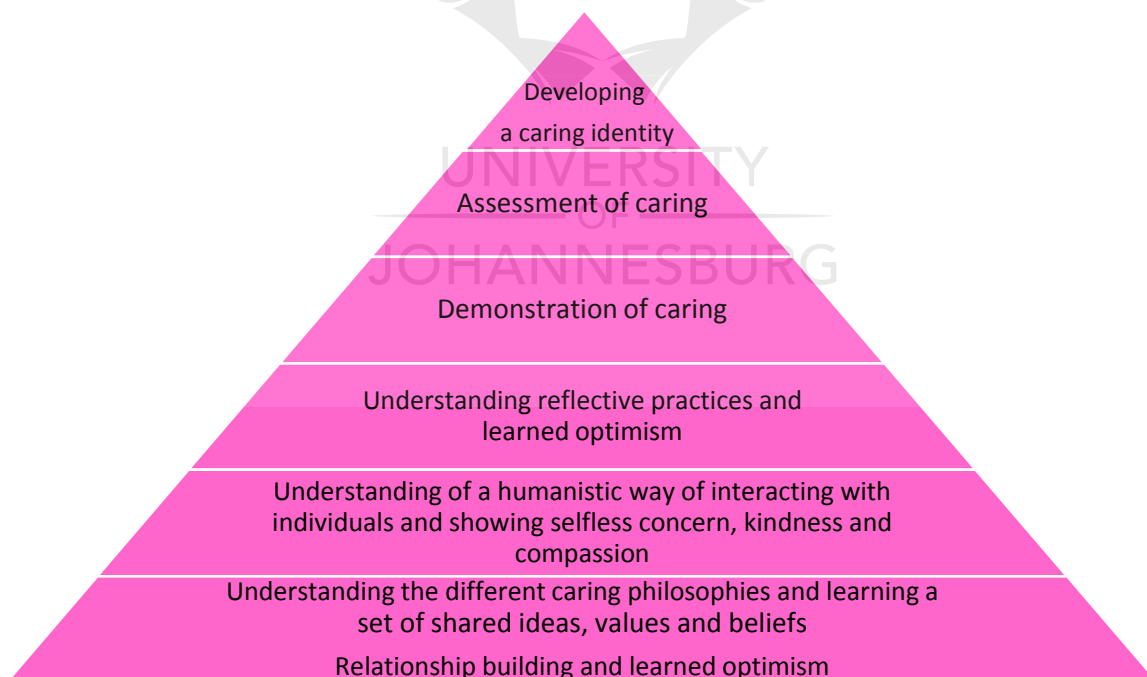
Each learning unit is aligned to the amended Miller's pyramid. This will allow the student to gain knowledge, competence, performance, action and a caring identity through the facilitation of a culture of caring.

Composition of the learning concept

Learning unit 1a	Relationship building and learned optimism
Learning unit 1b	Understanding the different caring philosophies and learning a set of shared ideas, values and beliefs
Learning unit 2	Understanding of a humanistic way of interacting with individuals and showing selfless concern, kindness and compassion
Learning unit 3	Understanding reflective practices
Learning unit 4	Demonstration of caring
Learning unit 5	Assessment of caring
Learning unit 6	Developing a caring identity

LEARNING UNIT 1A: RELATIONSHIP BUILDING AND LEARNED OPTIMISM

Unit learning outcome:

The aim of this unit is to develop a trusting and respectful relationship between the educator and students and for students to understand and apply Seligman's model of learned optimism.

Specific outcomes:

At the end of this learning unit the student will be able to:

- display a positive relationship with the educator and other students
- explain and apply learned optimism using Seligman's model of learn optimism in their daily life

Learning content

Activity 1: Fear in a hat

This activity will be conducted with all students present. Depending on class numbers this exercise may take time and can be conducted over a few lecture periods or in groups.

Students and the educator will write down their fear and place it into a big hat. The class will sit in a circle and the hat will be passed around. Each person will have a turn to pick on fear. When you pick up a fear you must try and explain what you think that person, whose fear that is, might feel. This exercise helps students to build relationships of trust and respect through the use of empathy. Once everyone has had a turn allow students a few minutes to engage in reflective discussion of what they have learnt and gain from this exercise.

Activity 2: Obstacle course

This activity will be conducted in groups of 2 or 3 and will take place outside.

Take the students outside to an over field or sports grounds and set up an obstacle course using cones, steps, chairs or any objects available. Blindfold one student and ask their team member to guide them through the course. This is a simple exercise to develop trust. The educator should also participate in order to guide the trust and respect of the students.

Activity 3: human bingo

This can be conducted over 2-3 lecture periods depending on student numbers
Students will be provided with a grid card similar to the one below. This card can be adapted to suit different environments and contexts. Ask students to walk around and interact with each other. They must find someone with at least 10 of the descriptions of the card. The same person cannot be used twice. This activity is a good way of encouraging students to talk and learn more about each other. The educator should also participate so that they learn more about the students as well as the students learning more about the educator.

Wearing black socks	Likes to exercise	Born in the same month as you	Likes selfies	First name starts with A
Can speak three different languages	Can cook	Lives at university residence	Knows how to play a musical instrument	Loves tea
Has a pet	Has children	Loves coffee	Is a vegetarian	Has a twin
Is the eldest child	Married	Is left handed	Has an allergy	Is not a morning person

http://www.instruction.greenriver.edu/esolfac/course_materials/L6/GettingStarted/Human_Bingo.pdf

Activity 4: Introduction and application of learned optimism

This can be conducted in the form of peer discussion in 2-3 lecture periods
The educator will provide students with Seligman's model of learned optimism explaining the use of ABCDE. The educator will allow students time to reflect on the ABCDE model. Then allow students to reflect on any adverse event whether it was personal or observed. They should try to apply the ABCDE method to determine how they handled the situation and thereafter apply the

same method to determine how they could have handled the situation. The example provided by Seligman may be used as an example for students to understand the application of the model.

Practical example to understanding the concept

The below is a practical example from Seligman's book "Learned optimism" which can be used to provide students with an understanding of the model and its use in the clinical environment (Seligman 2006:270).

Adversity: I have six hours left of my shift, we're short-staffed, and a doctor just told me I was too slow.

Belief: She's right. I am too slow. I should be able to keep things running smoothly at all times, and I don't. The other nurses would be able to keep up. I guess I'm just not right for the job.

Consequences: I feel really down on myself, and I feel guilty that I am not doing as good a job as I ought to. I feel like running out of the hospital in the middle of my shift.

Disputation: It would be ideal if things ran smoothly all the time, but that's not realistic, especially around a hospital. Anyway, it is not my responsibility alone to make sure everything is taken care of. I'm doing just as well as the other nurses on the shift. I may have been a little slower than usual, but we're short-staffed today so I am taking on extra responsibility, which means things take a little longer. I can feel good about taking on the extra work instead of feeling bad about the slight inconvenience it causes the doctor.

Energization: I feel a lot better about myself and much, much less guilty about any inconvenience to the doctor. The prospect of six more hours doesn't seem so overwhelming.

LEARNING UNIT 1B: UNDERSTANDING THE DIFFERENT CARING PHILOSOPHIES AND LEARNING A SET OF SHARED IDEAS, VALUES AND BELIEFS

Unit learning outcomes:

The aim of this unit is to allow students to develop an understanding of the concept of caring as described by Watson and Mayeroff.

Specific outcomes

At the end of this learning unit the student:

- Will be able to explain and discuss the concept of caring
- Will be able to construct and share a set of ideas, values and beliefs

Learning Content

Activity 1: Understanding the concept of caring

This learning activity can be delivered in the form of group work using problem based learning. This may take up 2-3 lecture periods.

The following scenario will be posed to the groups:

A 55 year old female patient arrives at the radiology department on a wheelchair. She is covered with a blanket and she is warmly dress with many layers of clothing. She needs a chest x-ray before they can take her to theatre for a surgical procedure. The patient is very scared and anxious as she this is her first time having an x-ray and she does not know what to expect. She is also fearful of her diagnosis. Review the different theories on caring and discuss what caring means to you and how you would apply this theory in caring for this patient.

Activity 2: Group discussion and presentation of understandings

This activity can be achieved using 1-2 lecture periods depending on student numbers.

Students to form groups of 8-10 people per group (should be different individuals from the first group in order to share knowledge). Within these groups ask students to reflect on their understanding of caring and write down a set of ideas, values and beliefs which they feel can be easily applied/is applicable in the clinical environment. This must then be shared with the class as a whole to construct a final set of shared ideas, values and beliefs of caring.

Assessment:

To assess the student's level of understanding of caring, a formal test may be written either with multiple choice questions or simple explanation type questions. This is appropriate for a first year level of assessment to demonstrate understanding of knowledge.
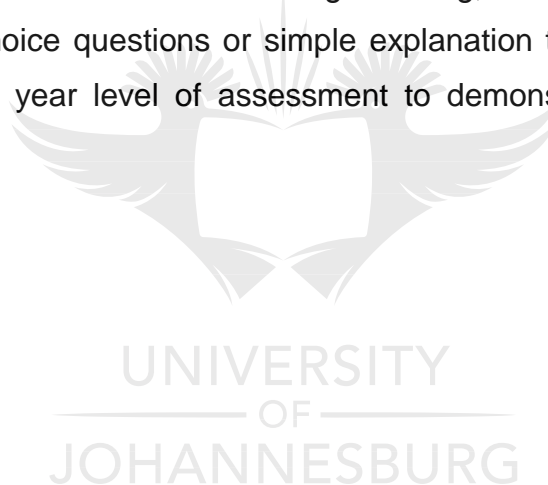
LEARNING UNIT 2: UNDERSTANDING OF A HUMANISTIC WAY OF INTERACTING WITH INDIVIDUALS AND SHOWING SELFLESS CONCERN, KINDNESS AND COMPASSION

Unit learning outcomes:

The aim of this unit is to demonstrate to students how to interact with patients in a humanistic way while incorporating relevant aspects of Watson's theory of human caring. Additionally, the aim of this unit is to enable students to understand how to display the attributes of a caring nature by means of selfless concern, kindness and compassion.

Specific outcomes

The student will be able to:

- Explain and describe effective communication
- Demonstrate an understanding selfless concern, kindness and compassion

Learning Content

Activity 1: understanding effective communication

This will be conducted in the form of a video demonstration of effective and ineffective communication in the workplace. If the educator has the time and resources they may record themselves role playing these scenarios or they can use videos available online.

The educator will play two videos, one on effective communication and the other on ineffective communication. Thereafter the student should answer the following questions:

- What does effective communication mean to you?
- Describe how you would communicate effectively?

Activity 2: Exercise to learn acts of kindness

The will be conducted in the form of group discussions first and then classroom discussion with all students together. This can be conducted in 2-3 lecture periods.

Students to form groups of 8-10 people per group. Then ask students to think of acts of kindness that they have witnessed or experienced. These acts can be simple gestures that made them feel good. This will allow them to reflect on what acts of kindness they consider important. Then as a class discuss these acts of kindness by writing down all ideas on flipcharts or on the blackboard. Now ask students to consider how they can apply these acts of kindness to patients. This will make students more conscious of their patient encounters in the future.

Additionally, educators should encourage students to maintain a kindness journal or logbook. Whereby they record their acts of kindness for the day or week, both on campus and within the clinical environment. These acts of kindness can be shared with other students as a way of encouraging kindness and making a way of life.

Activity 3: Teaching compassion (group work)

This will be conducted as a collaborative exercise in the form of group discussions

Provide students with the below guidelines on how to display compassion. Then ask students to develop a scenario of a radiographer interacting with a patient in which compassion is demonstrated. This scenario can be role played by the group members. Then ask other students to reflect on this scenario and discuss the follow:

e. Was compassion demonstrated

f. What were the radiographers strong points

g. What were the radiographers weak points

h. Any suggestions for improvement

1. **Be alive to your internal world** – your capacity to tolerate distress, your emotional state and your level of fatigue, and take measures to maintain resilience or improve matters if needed.

2. **Support the development of systems** at work that give you and your colleagues a space to reflect on what you are doing, and attend those events when they happen.

3. **Remember that patients are usually in distress** – that is why they are in your care. Treat them as people, not diagnoses. Remember the importance of basic communication and interview skills: intelligent listening, mindfulness with regard to dynamics, proper interview setting.

4. **Model compassionate behavior** for trainees and other members of staff. Like it or not, you work in a complex system, and how you are affects others around you.

5. **If there is system problem, do not work around it or ignore it.** Addressing it is your duty, and in the end it is better for you, your colleagues and your patients. Remember, the standard you walk by is the standard you accept.

6. **Respect systems, but think of people and relationships**. It is people who get things done, not forms on a computer. Go see someone rather than call, call rather than email. Foster good working relationships. Make tea. And do the washing up.

7. **Make the patient in front of you your primary concern**, but balance actions for that patient with actions you and the organization might have to take for others.

8. **Pay attention and be respectful.** When in consultations or meetings, turn phones and tablets off. Be in the situation, not somewhere else. And when your business is done, leave. Your time and energy are limited, and so are those of others.

Activity 4: Learning selfless concern

This will be conducted in groups of 8-10 people. This task will be conducted over a period of 6 - 8 months.

Encourage students to engage in a community outreach project of their choice. They must choose a project that they feel strongly about and decide what they would like to do to assist this cause. They will be given a few months to choose a charity organization they would like to assist. Then they must decide how they

will assist this organization. It can be simple tasks like running a food drive, spending time playing with kids in an orphanage or collecting old clothing. At the end of the time allocated they must present to the class they outreach project.

Activity 5: Educator demonstrating a humanistic way of interacting with patients, showing selfless concern, kindness and compassion

Role playing exercises / simulation based teaching in the form of realistic scenarios will be used. These can be conducted in 2 or 3 sessions depending on availability of time within the designated module.

A case scenario demonstrating good caring practices should be simulated in a simulation lab or radiographic x-ray room in order to demonstrate to students how to interact in a caring humanistic way with patients. In this activity, the students will be observers. At this level students will not yet be clinically competent, so the clinical case of choice is not relevant however a general x-ray case is recommended. Below are suggested scenarios:

A 32 year old female patient presents to the radiology department with fever, cough and sore throat. The referring physician requests a chest x-ray to rule out possible infection (pneumonia or bronchitis).

A 70 year old male patient arrives at the radiology department in a wheelchair, with a many layers of clothing and a blanket over him. He needs a knee x-ray due to a fall in the shower. The patient is fully cognitive and has limited mobility on the injured side.

After the scenario is completed allow students to have a 30 minute peer discussion of the simulated encounter. Depending on the simulation lab being utilized, these simulated scenarios can be recorded to allow for further discussions at a later point in time. Also the recordings can be shared with students so that they can learn at their own pace when reviewing these videos later on.

Below is a set of suggested guidelines for good caring practices:

These guidelines can be adapted and changed accordingly and should be shared with students.

At the beginning you should:

- Introduce yourself with a smile, if there are family members present acknowledge them as well
- Allow for an orientation of the patient if needed
- Establish an attentive, respectful and non-judgmental relationship
- Acknowledge the patient's emotions and concerns

Then listen, question and understand your patient by:

- Ensuring you fully understand the patients clinical history
- Confirming the history with the patient
- Addressing any concerns the patient may have
- Ensure your patients comfort at all times, be observant of this to because some patients may not indicate discomfort out of fear

Next is the explaining and advising:

- Explain the procedure in simple terms for the patient to understand
- Confirm that your patient does understand
- Respect your patient and request permission from your patient to undertake the study
- Reassure your patient throughout the examination

Assessment:

An objective structured clinical examination (OSCE) or oral exam (viva)

LEARNING UNIT 3: REFLECTIVE PRACTICE

Unit learning outcomes:

The aim of this unit is to develop an understanding of reflective practice amongst students by providing them with the necessary tools to become reflective practitioners.

Specific outcomes

At the end of this learning unit the student will be able to:

- Explain the use and importance of reflective practice
- Apply Gibbs model

Learning Content

Activity 1: Introduction to reflective practice

This can be conducted in the form of a formal lecture in 1-2 lecture periods

The educator will conduct a theory lecture covering the following topics:

- What is reflective practice?
- How to become a reflective practitioner using Gibbs model

Activity 2: Personal reflection

This can be conducted as an individual assignment based on the teachings from activity1.

Think of any experience that you recently encountered. This experience can be of either a positive or negative nature. Using the 6 stages of Gibbs model, write a reflective report in as much detail as possible. This will allow the student to familiarize and better understand the different stages of the model.

LEARNING UNIT 4: DEMONSTRATION OF CARING

Unit learning outcomes:

The aim of this unit is for the student to demonstrate their understanding of caring.

Specific outcomes

At the end of this learning unit the student will be able to:

- Demonstrate humanistic caring through selfless concern, kindness and compassion

Learning Content

Activity 1: students demonstrating a humanistic way of interacting with patients showing selfless concern, kindness and compassion

Role playing exercises / simulation based teaching in the form of realistic scenarios will be used. These can be conducted in 2 or 3 sessions depending on availability of time within the designated module. Ideally all students should have a chance to participate

This is similar to unit 2 activity 1, however now students will be given the opportunity to be involved in the simulation as being the radiographer and patient. The same scenarios can be used to see if students are able to demonstrate the necessary attributes of a caring radiographer.

Once again after the simulation, peer discussions can take place. Here the student involved can share their experience as being a caring radiographer and how it made them feel. And the student who was the patient can share their experiences of being a patient and how it made them feel. This will allow for students to reflect on the good and also allow them a chance to learn from their mistakes.

LEARNING UNIT 5: ASSESSMENT OF CARING

Unit learning outcomes:

The aim of this unit is to assess the student's ability to demonstrate caring attributes towards a patient

Specific outcomes

At the end of this learning unit the student will be able to:

- Apply their knowledge of caring
- Demonstrate the ability to interact with patients in a humanistic manner the ability to show selfless concern, kindness and compassion towards patients within the clinical environment

Learning Content

Activity 1: OSCE assessment

This assessment will be conducted in a clinic or practical center at the higher education institution. The time for this will vary depending on the number of stations set up for the assessment.

There will be a variety of different stations set up assessing different caring skills of the student. Each station will be timed and the student will be required to move from one station to the other until all stations are completed. This will allow for the assessment of the demonstration of caring in different situations in one assessment. Possible stations:

- Caring for a patient prior to the examination
- Caring for a patient during the examination
- Caring for the patient after the examination
- Communication with an anxious family member
- Caring for a patient in a wheelchair
- Caring for an elderly patient

Activity 2: Clinical assessment

This assessment will be conducted in the clinical environment where the student undertakes their work integrated learning.

The student will be required to perform an x-ray examination, for a first year level student, on a patient in the clinical environment. This will assess their ability to interact and demonstrate caring attributes within a real life situation. The below assessment tool will be added to the normal clinical assessment tool that is used to assess other clinical skills like positioning, equipment and patient care. This tool is a recommendation and may be adapted accordingly.

Did the student demonstrate the following caring attributes towards the patient before the examination	Yes	No
7. Approached the patient in an enthusiastic manner		
8. Greeted the patient with a sincere smile		
9. Attentively listened to the patient		
10. Used paraphrasing to demonstrate good listening and understanding of the patient's condition		
11. Used the power of touch to reassure the patient		
12. Explaining the procedure in simple terms so that the patient understands		
Any additional comments:		

Did the student demonstrate the following caring attributes towards the patient during the examination	Yes	No
6. Ensured the patient was comfortable at all times (Providing a pillow or blanket)		
7. Was attentive to the patients' needs without the patient having to request anything		
8. Continued to effectively communication with the patient		
9. Was authentically present in the moment with the patient i.e. did not use cellphones during the examination, kept an eye on the patient at all times		
10. Used the power of touch to reassure the patient		
Any additional comments:		

Did the student demonstrate the following caring attributes towards the patient after the examination	Yes	No
5. Assisted the patient out of the room		
6. Explained the procedure that would follow		
7. Asking the patient if they required any other information		
8. Answering all the patients questions in a kind and compassionate manner		
Any additional comments:		

LEARNING UNIT 6: A CARING IDENTITY

Unit learning outcomes:

The aim of this unit is to allow the student to develop their own caring identity in this way the skills learnt become a part of them.

Specific outcomes

To develop a lifelong caring identity through reflective practice

Learning Content

    Activity 1: Reflective Journal

    At a first year level students begin their work integrated learning after spending 6 months on campus. Therefore it is anticipated that the student would have been equipped with the skills necessary to engage in reflective practices.

    At the beginning of their clinical rotations students should be given journals to document their clinical experiences. This can be done daily, weekly or every two weeks depending on the student's rotation schedule. When the student is back on campus their experiences can be shared with the rest of the class to promote sharing of knowledge.

Suggested activities for higher levels

Simulated based scenarios

Level of study	Caring theory	Scenario 1	Scenario 2
2nd year	Roach and Leingner	Caring for a pediatric patients	Caring for a patient during a bed side unit x-ray
3rd year	*Research based activity	Caring for a trauma patient and their family members present	Divide students in to groups of 8-10 and ask them to write down a personal experience on a piece of paper. Then place all the pieces of paper into a bowl. Ask each student to pick one paper and read the experience as if it were their own. The student must stay in character at all times. This will allow each student to have a turn to place themselves in another person's shoes allowing them to develop empathy
4th year	*Research based activity	Caring for a patient with a mental illness (Alzheimer's disease) for a CT abdomen.	Caring for an ICU needing an urgent CT scan

*_Research based activity will allow students to research the latest studies on the concept of caring within Radiography and other healthcare professions. These studies can be shared with the class as a whole in the form of peer discussions or oral presentations_.

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