

**FRAMEWORK TO MITIGATE DISRUPTIVE BEHAVIOURS
INVOLVING RADIOGRAPHERS AT CENTRAL
HOSPITALS IN HARARE METROPOLITAN PROVINCE,
ZIMBABWE**

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in the Faculty of Health Sciences at the Durban University of Technology

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Date : October 2021

Declaration

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entirely my own and not that of any other person, unless explicitly acknowledged (including citation of published and unpublished sources).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

Signature of student

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Abstract

Background

Disruptive behaviours in healthcare have become an unprecedented global problem, transcending borders, work settings and professional groups. Concerns about their impact on patient safety has led many international medical organisations and other healthcare professions to escalate the urgency of knowing the prevalence, causes and consequences of these unprofessional behaviours in different healthcare settings. Evidence shows that assessing and mitigating disruptive behaviours is critical to empowering health workers to focus on delivering high-quality, cost-effective and safe patient care. However, there is a paucity of literature exploring disruptive behaviours involving radiographers in Zimbabwe. Additionally, there is no written policy to monitor and mitigate disruptive behaviours in the Zimbabwean radiography workforce. The challenge of disruptive behaviours is of significant concern for radiographers because they use radiation that has hazardous effects on living organism cells.

Aim

The aim of the research was to explore disruptive behaviours involving radiographers and the consequences thereof at central hospitals in Harare Metropolitan Province in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted.

Methodology

A mixed-methods convergent parallel approach using the parallel databases variant was employed. Disruptive behaviours from 100 randomly sampled radiographers were evaluated using a semi-structured questionnaire. In addition, in-depth interviews were conducted with 11 radiography managers selected by criterion purposive sampling, in order to explore factors and strategies to mitigate these behaviours.

Findings

Disruptive behaviours involving radiographers in HMP are rampant and create an unhealthy work environment that can lead to compromised patient radiation protection by negatively affecting the implementation of radiation protection protocols or procedures. Cultural and environmental factors relating to disruptive behaviours in Harare Metropolitan Province include a power hierarchy, the work environment and the absence of a reporting framework. Nevertheless, the strategies to mitigate these behaviours may include awareness, willingness to address the behaviours and conflict resolution.

Key words: Disruptive behaviour, Framework, Patient safety, Radiographers

Dedication

This study is dedicated to the memory of my beloved parents, Maria and Patrick, who both passed on during the course of my studies. Although they were my inspiration to pursue my doctoral degree, they were unable to see my graduation. Rest in Peace.

To my wife Nicole, who has been a source of support and encouragement during the trials of graduate school and life. I am truly thankful for having you in my life.

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Glossary of terms

Antecedents: Healthcare work events, phenomena, conditions or environmental factors that contribute to an incident of disruptive behaviour.

Attributes: Phrases, themes or words typically used by authors to describe the characteristics of a concept.

Disruptive Behaviour: Any form of unprofessional interaction between health care team members, healthcare workers and/or patients and families that negatively affects patient care (Brooks *et al.* 2014: 40).

Low resource settings: Regions typically characterised by a lack of funds to cover healthcare costs on an individual or societal basis.

Radiographer: An allied health professional who uses both ionising and non-ionising radiation to produce images or treat cancer.

Radiologist: A medical doctor who specialises in diagnosing and treating pathology using medical imaging techniques such as x-rays, magnetic resonance imaging and ultrasound.

Uncoupling effect: With digital technology, the image is uncoupled from the dose, such that when a mA or kVp setting that is too high is used, a good image results. This effect can make it difficult to identify when a dose that is higher than necessary is used.

Work environment: The setting, social features and physical conditions in which individuals perform their jobs.

List of acronyms

Acronym	Full word/sentence
ACR	American College of Radiology Commission
AHPCZ	Allied Health Practitioners Council of Zimbabwe
AL	Authentic Leadership
CCH	Chitungwiza Central Hospital
DB	Disruptive Behaviour
DUT	Durban University of Technology
GoZ	Government of Zimbabwe
HCH	Harare Central Hospital
HMP	Harare Metropolitan Province
HR	Human Resources
IAEA	International Atomic Energy Agency
ICN	International Council of Nurses
ILO	International Labour Office
IREC	Institutional Research Ethics Committee
LMX	Leader-Member Exchange
MoCC	Ministry of Health and Child Care
MRCZ	Medical Research Council of Zimbabwe
NM	Nuclear Medicine
PGH	Parirenyatwa Group of Hospitals
PSI	Public Services International
RM	Radiography Manager
SOR	School of Radiography
SoR	Society of Radiographers
WHO	World Health Organization

CHAPTER 1: OVERVIEW OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND

This introductory chapter provides an overview of the study by elaborating the statement of the problem, the purpose of this study, its objectives, the structure of the dissertation and the justification for the study.

Disruptive behaviours (DBs) in healthcare are defined as any form of unprofessional interaction between healthcare workers, healthcare team members and/or patients and relatives that negatively affect patient care (Brooks *et al.* 2014: 40). The majority of reported behaviours comprises abusive language, violence, demeaning remarks, harassment or other forms of bullying. These behaviours have become an unprecedented global problem transcending borders, work settings and professional groups. Disruptive behaviours reported by staff in 98% of healthcare work settings (Rehder 2020: para. 3 line 5) undermine the rights of patients to safe healthcare and the rights of healthcare workers to a healthy work environment (ILO *et al.* 2002: 1). Furthermore, organizational outcomes such as cost, staff turnover and job satisfaction are also affected (Layne *et al.* 2019: 156). Concerns about DB impact have led numerous international medical organisations (Institute of Medicine 2007), the Joint Commission standard connected to inappropriate and disruptive behaviour (Joint Commission 2008: 1) and other healthcare professions (ACOG 2017: 1; ICN 2017: 1; McArdle 2019) to escalate the urgency of determining the prevalence, causes and consequences of these negative behaviours in different healthcare settings. Unfortunately, despite efforts to improve health worker conduct, DBs remain common occurrences as frequently as daily in many healthcare settings (Rehder *et al.* 2020: 19). However, evidence shows that mitigating DBs is critical to empowering healthcare workers to focus on providing superior, affordable and safe patient care (Ruplin and McCarthy 2019: 120).

Disruptive behaviour is a concept that articulates human behaviour, work performance in healthcare and patient safety (Oliveira *et al.* 2016: 696). A series of recent studies have indicated that exposure to DBs can negatively affect the cognitive functions necessary for successful diagnostic and medical performance by health workers (Riskin *et al.* 2015: 491; Katz *et al.* 2019: 750; Gilam *et al.* 2020: 1). Furthermore, exposure to DBs hamper the very collaborative mechanisms recognized as essential for patient care and safety (Riskin *et al.* 2017: 1). Accordingly, the procedural performance of safety protocols by radiographers can be affected by exposure to these behaviours, leading to compromised patient radiation protection and safety (Trad and Johnson 2014: 12; McArdle 2019: para 2. line 4). The challenge of DBs is therefore of significant concern for radiographers because they use radiation, which has hazardous effects on living organism cells (Quinn 2019: 761).

Although DBs are universal in healthcare, there are unique DBs triggers in low resource setting radiography (Willis *et al.* 2018: 1640; Hattingh *et al.* 2019; 20). There are, however, only a few studies exploring DBs in radiography (Ng *et al.* 2009: 355; Fredrick 2014: 22), especially in low resource settings like Africa (Chappell and Di Martino 2006: 52; Jain *et al.* 2012: 326; Sisawo *et al.* 2017: 1). Large scale studies conducted in the developed world have mainly focussed on the perspectives of nurses and physicians (Institute for Safe Medication Practice 2014: 1; Rehder *et al.* 2020: 19). Undeniably, further research is warranted to address how DBs might affect radiology (Brown *et al.* 2009: 479). The American College of Radiology Commission (ACR) on Human Resources and the Society of Radiographers (SoR) have shown commitment to a healthy work environment, free from DBs, in radiography (Parikh *et al.* 2017: 1). Therefore, instituting and upholding a healthy work environment that fosters clinical and professional excellence should be a priority for radiography managers (RMs) (VanNieuwenhuyzen 2016: 15).

The Labour Act of Zimbabwe, makes provision for a fair and safe work environment (Zimbabwe, Ministry of Justice 2006: 11). In addition, the Zimbabwe Patients' Charter (Zimbabwe, Health Ministry 2006: 3) and the Radiation

Protection Act (Zimbabwe, Health Ministry of Zimbabwe 2005: 6) espouse the rights of patients to safety during radiographic examinations. Furthermore, research findings in other healthcare professions and settings have shown that if not addressed, DBs can cause medication errors, staff turnover, wrong-site surgery or even patient mortality (Grocott and Bryson 2017: 120; Layne *et al.* 2019: 2; Ruplin and McCarthy 2019: 281). This study focusses on DBs and their consequences for patient radiation safety in radiography. Indeed, general literature shows that the implementation of radiation protection and safety practices in radiography have always been from a technical point of view (IAEA 2020: 1). The behavioural or humanistic factors in patient safety have been largely ignored (Pham *et al.* 2012: 452). However, the technical point of view does not provide solutions to all questions related to radiography practice, particularly the “human” side of the profession involving patient contact and staff working interactions (Munn *et al.* 2013: 47).

There is a scarcity of literature exploring DBs in Zimbabwe and there is no written policy to monitor and prevent DBs in the Zimbabwean radiography workforce. Evidence shows differences in DB patterns, triggers and consequences amongst hospital departments, as well as on their effect on the selection of tools for effective mitigation (Berman-Kishony and Shvarts 2015: 10; Vukmir 2016: 60). Indeed, the next main challenge in safety research is to assess and mitigate the human behavioural factors and processes that influence safety in the workplace (Zohar 2010: 42). In other healthcare settings, interventions have been developed to mitigate DBs and support victims (Hattingh *et al.* 2019: 19).

Although HR policies and procedures on managing DBs are in place, DBs still exist (Martin 2008: 21). The author maintained that leaders in the organisations should also consider various strategies to reduce DBs in hospital settings. A more practical method of prevention and support by leadership has been encouraged by Willis, Friedman and Donnelly (2018: 1645). Promoting professional conduct and creating a culture of radiation safety in radiography is difficult without leadership’s commitment, along with a framework for managing

mitigation processes; suitable institutional policies; surveillance tools; training of healthcare team members; and accountability to one another (Hickson *et al.* 2007: 1041; Health Quality Council of Alberta 2013: 16; Philips [n.d.]: 3). The aim of this study was to explore DBs involving radiographers and their consequences on patient safety in order to develop a framework to mitigate these behaviours at central hospitals in Harare Metropolitan Province (HMP). Taking an Authentic Leadership (AL) perspective, this mixed methods convergent parallel study evaluated DBs from 100 radiographers using a semi-structured questionnaire and in-depth interviews with 11 RMs to explore strategies to mitigate these behaviours. The study sought to articulate management values; underscoring prevention and the role of leadership; and the need to empower radiographers to try to resolve interpersonal issues in a positive way. It is anticipated that this study will help RMs to design leadership approaches that promote healthy work environments, which empower radiographers to focus on delivering superior, affordable and safe patient care.

1.2 PROBLEM STATEMENT

Disruptive behaviours in healthcare have been shown by numerous studies to undermine both patient safety and organizational outcomes such as cost, staff turnover and job satisfaction (Layne *et al.* 2019: 156; Harolds 2020: 1; Rehder *et al.* 2020: 2). Exposure to DBs can negatively affect the cognitive functions necessary for effective diagnostic and medical performance by health workers (Porath and Erez 2011: 508; Riskin *et al.* 2015: 491; Katz *et al.* 2019: 750; Gilam *et al.* 2020: 1). Furthermore, exposure to DBs hampers the appropriate collaborative mechanisms identified as crucial for patient care and safety (Riskin *et al.* 2017: 1). The challenge of DBs is of significant concern for radiographers because they use radiation, which has hazardous effects on the living organism cells (Quinn 2019: 761). Patient radiation protection and safety is paramount in the radiography profession (Alice *et al.* 2014: 2). Accordingly, the procedural performance of radiation protection protocols by radiographers can be affected by exposure to these behaviours leading to compromised patient safety (Trad and Johnson 2014: 12; McArdle 2019: para 2. line 4).

Though HR policies and departmental procedures exist, the problem of DBs still exists in all professions (Martin 2008: 21) and the situation is getting worse (Porath and Erez 2011: 508). Findings in high resource settings show that preventing and managing DBs is critical to empowering health workers to focus on delivering superior, affordable and safe patient care (Ruplin and McCarthy 2019: 120).

The extent of DBs in nurses' workplaces was discussed extensively in literature but there is little information with regard to their effective management (Rogers-Clark *et al.* 2009: 673; Health Quality Council of Alberta 2013: 14). Moreover, there is a scarcity of literature exploring DBs and there is no written policy to monitor and prevent DBs amongst the Zimbabwean radiography workforce. Evidence shows differences in DB patterns, triggers and consequences amongst hospital departments and their effect on the selection of tools for effective mitigation. Tailor-made interventions therefore take into account the setting's circumstances, but are achievable in light of available resources (Berman-Kishony and Shvarts 2015: 10; Vukmir 2016: 60). Leaders all over the world are looking for ways to mitigate DBs and their consequences (Lata 2019: 1). However, a more practical approach of prevention and support has been supported by researchers, the aim being to considerably reduce or preferably eliminate the need to manage DBs and to promote a culture of true zero-tolerance in radiology (Willis, Friedman and Donnelly 2018: 1645). Promoting professional conduct and consequently creating a culture of radiation safety in radiography is difficult without leadership commitment; a framework for managing mitigation processes; suitable institutional policies; surveillance tools; training of healthcare team members; and accountability to one another (Hickson *et al.* 2007: 1041; Health Quality Council of Alberta 2013: 16; Philips [n.d.]: 3).

1.3 AIM OF STUDY

The aim of the study was to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted.

1.4 OBJECTIVES OF STUDY

The objectives of the study were to:

- Determine the DBs involving radiographers that impede a safe work environment for radiographers at central hospitals in HMP;
- Determine the consequences of DBs involving radiographers employed by central hospitals in HMP;
- Explore the environmental and cultural factors that provoke DBs involving radiographers;
- Identify strategies to mitigate DBs involving radiographers in central hospitals in HMP; and
- Develop a framework to mitigate DBs involving radiographers employed by central hospitals in HMP.

1.5 RESEARCH QUESTIONS

The study was guided by the following research questions:

1.5.1 Main question

- What would constitute a framework to mitigate the consequences of DBs in low resource setting radiology departments?

1.5.2 Sub-questions

- Which DBs involving radiographers impede a safe work environment at central hospitals in HMP?

- What are the consequences of DBs involving radiographers employed by central hospitals in HMP?
- What environmental and cultural factors would elicit DBs involving radiographers at central hospitals in HMP?
- Which strategies can be used to mitigate DBs involving radiographers in central hospitals in HMP?

1.6 JUSTIFICATION OF STUDY

This study represents a unique approach to the broad topic of DBs in healthcare by focusing on a professional group previously under-represented in research: radiographers in low resource settings. Understanding the viewpoints of radiographers in these settings is important as this professional group uses hazardous radiation, with inadequate resources, in the execution of their duties, making patient safety of paramount importance. DBs involving radiographers have been shown to compromise patient safety (Trad and Johnson 2014: 12; McArdle 2019: 1). While researchers continue to examine DBs in other healthcare professions and settings, there are few studies exploring these behaviours in radiography (Brown *et al.* 2009: 479; Ng *et al.* 2009: 355; Fredrick 2014: 24), especially in low resource settings like Zimbabwe (Chappell and Di Martino 2006: 50; Jain *et al.* 2012: 326; Sisawo *et al.* 2017: 1). Indeed, there is a scarcity of literature exploring DBs in Zimbabwe, and there is no written policy to monitor and prevent DBs in the Zimbabwean radiography workforce. The American College of Radiology Commission (ACR) on Human Resources and Society of Radiographers have shown commitment to a healthy work environment free from DBs (Parikh *et al.* 2017: 1; McArdle 2019). A framework to mitigate DBs is therefore necessary because a look at the global situation reveals that many organizations/enterprises and governments have not understood the benefits of healthy work environments, or lack the knowledge, tools and skills to improve the situation (Burton 2010: 7).

Vukmir (2016: 60) referred to the research gap in this area, stating that evidence shows differences in DB patterns, triggers and consequences amongst hospital departments, as well as their effect on the selection of tools for effective mitigation. Tailor-made interventions therefore consider the setting's circumstances, achievable in light of available resources. Furthermore, there is a need for organizations to consider employee perspectives while creating interventions on DBs. This study addresses these gaps by discovering the leadership perceptions and safety concerns of radiographers in Zimbabwe. If this study is indeed the first study to explore DBs involving radiographers in Zimbabwe, the findings could serve as a reference point for additional extensive studies to meticulously evaluate the problem of DBs in the Zimbabwean healthcare labour workforce. By extension, the findings could also add to existing literature on low resource settings where the topic is under-researched.

The results of this study are vital to radiographers and healthcare organizations because they provide insight into the humanistic factors and their consequences of patient radiation safety, which has been overlooked for a long time. In this study, the researcher wishes to make an addition to the work of Hystada *et al.* (2013: 42), who assert that AL style and psychological capital has an influence on the safety climate and risk outcomes in workplaces. After completing the study, the findings accrued from the research must either extend, validate or adjust the existing theory that was borrowed for the dissertation (Adom *et al.* 2018: 439). This study allows respondents to share their perceptions anonymously. The American College of Obstetricians and Gynaecologists (ACOG 2017: para 2. line 5) explain that “co-workers often are reluctant to report disruptive behaviour because of fear of retaliation and the stigma associated with ‘blowing the whistle’ on a colleague”. Therefore, anonymity in this study provides a way for radiographers to share their concerns about DBs without fearing any type of retribution. This is significant because if employees are not comfortable, they may not report concerns. Under-reporting, according to Sisawo *et al.* (2017: 9), may be detrimental to efforts to mitigate DBs.

It is anticipated that this study will help Radiology departments develop strategies to mitigate DBs and contribute to the establishment of a healthy workplace in which safe, superior patient care can be delivered. It will assist RMs in developing departmental practices and policies that enable radiographers to cope with DBs at an interpersonal level, as well as institute a more official process for dealing with unresolved or enduring issues. By developing similar procedures, academic programmes for radiographers can emphasize the importance of respectful and professional behaviour to patient care. Furthermore, this study aspires to introduce evidence-based practice and encourage radiographers to be reflective practitioners. The study will also be helpful to scholars who wish to study more about these behaviours, specifically within Zimbabwean healthcare.

1.7 STRUCTURE OF THE THESIS

CHAPTER 1: Introduction and background.

CHAPTER 2: Literature review.

CHAPTER 3: Theoretical framework underpinning the study.

CHAPTER 4: Research design and methodology.

CHAPTER 5: Presentation and interpretation of results in the quantitative phase.

CHAPTER 6: Presentation and interpretation of results in the qualitative phase.

CHAPTER 7: Mixing and integration of the findings from the quantitative and qualitative strands.

CHAPTER 8: Discussion of results from both the quantitative and qualitative phases of the study.

CHAPTER 9: Development of a framework to mitigate DBs involving radiographers.

CHAPTER 10: Summary, recommendations, limitations and conclusions.

1.8 CHAPTER SUMMARY

This chapter has provided the background and context for the study, which outlined the significance of healthy work environments to patient radiation safety in radiography. The problem statement shows that preventing and managing DBs is critical to empowering radiographers to focus on delivering superior, affordable and safe patient care. In the next chapter, the focus turns to the literature in an attempt to unpack how DBs compromise healthcare outcomes in low resource radiography settings. Furthermore, the researcher evaluates literature on interventions to mitigate the consequences of DBs in radiography.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

A literature review offers scholars a context for understanding existing knowledge on a topic and sheds light on the motivation of the new study (Polit and Beck 2014: 89). The aim of this study was to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. The previous chapter provides a background on the impact of DBs in radiography and their consequences. This chapter further reviews the literature on the impact of DBs on patient safety, the radiographer and the organization as a whole. In addition, literature pertaining to the global causes, prevalence, consequences and interventions of DBs in different healthcare settings will be evaluated accordingly. Literature on the strategies that can be employed by leadership in addressing DBs will be appraised, as well as the terminology, concepts and key variables of DBs in healthcare.

This review seeks to illuminate the following pertinent questions:

- What constitutes DBs in healthcare, and radiography in particular?
- What is the prevalence and cause of DBs globally, in Africa and Zimbabwe?
- What are the consequences of DBs on patient safety, the radiographer and the organization?
- What strategies can leadership employ in creating a healthy work environment, free from DBs in different healthcare settings?

2.2 LITERATURE REVIEW: METHOD

The review of literature commenced in March 2020, following the steps suggested by Teddie and Tashakkori (2009: 109), with a search of at least three healthcare databases: CINAHL (Cumulative Index to Nursing and Allied Health Literature), Embase and PubMed. The keywords used for the search were: “Disruptive behaviour”, “radiographer”, “radiologic technologist”, “radiology”, “workplace violence”, “intimidation and bullying”, “lateral, “horizontal”, violence” and “low resource settings”. No time limitation was applied to the search. Google Search (provided by Google©), Google scholar and ScienceDirect were also used in the process of collecting information, as an addition to the three databases searched. A targeted manual search of the Zimbabwean healthcare journal “*The Central African Journal of Medicine*” did not produce any articles on issues pertaining to DBs involving radiographers. Other popular journals with Zimbabwean radiographers are “*The South African Radiographer*” and the international journal “*Radiography*”, which were also manually searched. No original studies addressing DBs as a broad topic in radiography were found. Only four original articles that addressed the themes or attributes of DBs in radiography were found. The theme of DBs addressed by these studies was “workplace violence”, only two of which addressed these themes with respect to low resource settings, suggesting limited research conducted in this area.

Indeed, the scarcity of literature on DBs in radiography was also reported by numerous authors (Brown *et al.* 2009: 479; Ng *et al.* 2009: 335; Fredrick 2014: 24). Fredrick (2014: 24) state that “there is a shortage of data on DBs available specifically for imaging centres or hospital imaging departments”. Moreover, Ng *et al.* (2009: 355) state that more research is required to investigate the problem of DBs in radiography as “society is increasingly becoming violent, with a global upsurge in the level of aggression in the workplace”. Brown *et al.* (2009: 479), on the other hand, were curious about how DBs would affect radiology. The shortage of literature on DBs, particularly in low resource settings, has also been highlighted by many authors (Chappell and Di Martino 2006: 52; Jain *et al.* 2012: 326; Sisawo *et al.* 2017: 1). Without a doubt, radiographers have

suffered silently from these behaviours. The SoR was quoted as saying “this is a final straw after years of bullying, harassment and victimisation”, after the NHS Ayrshire radiographer bullying row (McArdle 2019: 1). Considering the paucity of suitable literature, the search parameters were widened to include DBs from other healthcare professions. Most literature obtained included studies of DBs involving nurses, physicians and pharmacists. The exclusion criteria included studies on DBs, incivility or workplace violence involving learners and inside academic settings. After the initial removal of double entries and irrelevant abstracts, the researcher retrieved all the full-text articles matching the inclusion criteria (original mixed methods studies, systematic reviews, meta-analysis, reports and secondary sources). After the screening, the following literature was included in the literature review, which is presented in the following sections:

- DBs in healthcare: The definition.
- DBs in healthcare: A global context.
- DBs in low resource settings.
- DBs in healthcare: A Zimbabwean context.
- Role of leadership: DBs and patient safety.
- Patient safety in radiology.

The review of literature that follows outlines the causes, consequences and interventions of DBs in healthcare, and in radiography specifically. The literature also evaluates the role of leadership in mitigating these behaviours by taking a proactive role.

2.3 DISRUPTIVE BEHAVIOURS IN HEALTHCARE: THE DEFINITION

DBs in healthcare have been documented in medical literature for more than 100 years. However, the term “disruptive” was added as a label only recently (Piper 2003: 335; Vukmir 2016: 1; Loh *et al.* 2019: 222). DBs are a broad and diverse group of unprofessional behaviours and hence varying definitions exist in literature (Oliveira *et al.* 2016: 696; Willis *et al.* 2018: 1640; Layne *et al.* 2019: 155). Choctaw (2008: 1) and ILO *et al.* (2002: 3) argue that it is important that

healthcare leaders and hospital managers develop a definition that is mutually acceptable. The definitions are imperative since they offer a context that allows healthcare leaders to effectively provide peer reviews of colleagues, as well as an outline for analysis. When the behaviours are defined, it is easier to monitor, track and analyse the trends (Vukmir 2016: 6). However, defining suitable and unsuitable behaviour involves making value judgments. Human communication borders on the realm of subjectivity as individual perceptions and feelings are different. When it comes to developing healthcare staff policies and procedures, it is important to be spot on because what is tolerable behaviour in one healthcare setting may not be in another (Burton 2010: 13; Reynolds 2012: 12; Geoffrion *et al.* 2015: 195). Vukmir (2016: 24) notes that there are significant regional and geographic variations in the behaviours described. This underscores the need to develop a definition of DBs that takes into consideration the values, culture and perceptions of the healthcare setting (ILO *et al.* 2002: 1; Berman-Kishony and Shvarts 2015: 1; Vukmir 2016: 60). This is what gave the drive to carry out this study: “*A framework to mitigate DBs involving radiographers at central hospitals in HMP*”. The study will enable radiography professionals to define DBs in their own contexts and settings by documenting what constitutes acceptable and unacceptable behaviour. Indeed, effective solutions are context-related and hence primacy has to be given to the local and organizational levels (Wiskow *et al.* 2010: 7), as is the case in this study.

A comprehensive literature review by Oliveira *et al.* (2016: 697) of at least 13 definitions noted that authors defined DBs using attributes or consequences, or both. Attributes define words or phrases that describe DBs. The attributes and characteristic conduct behaviours of DBs used in literature include:

- Publicly humiliating a colleague;
- Acting or speaking meanly;
- Invading one’s space;
- Yelling;
- Intimidating;
- Bullying;

- Using abusive language;
- Tossing items, e.g., medical records or instruments;
- Gossiping or quarrelling;
- Sabotage;
- Racial, ethnic or tribal jokes;
- Discriminatory attitudes;
- Hostile avoidance or the “cold shoulder” treatment;
- Making threats;
- Demands for exclusive treatment; and
- Physical violence (Frederick 2014: 587; Grissinger 2014: 1; Rosenstein 2015: 3; Oliveira *et al.* 2016: 690).

The American Medical Association has defined DBs as: “a style of interaction between a physician, patients, family members, hospital personnel or others, which interferes with patient care” (American Medical Association [n.d.]: para. 1 line 1). This definition includes both an attribute and consequences of the behaviour. In addition, Piper (2003: 335) used the following definition “Any kind of interpersonal interaction that can lead to inadequate patient care and negatively impact the organization's ability to operate in an orderly manner to fulfil its mission”. This definition emphasizes the consequences of DBs. From the many definitions encountered in literature, only one had to be chosen. In this study, a definition adapted from Brooks *et al.* (2014: 39) was chosen because it was the most clear, simple and comprehensive, and captured both attributes and consequences of DBs. Therefore, DBs for the purposes of this study were defined as “any form of unprofessional interaction between healthcare team members, healthcare workers and/or patients and families that negatively affects patient care” (Layne *et al.* 2019: 154; Brooks *et al.* 2014: 39).

2.3.1 Fundamental concepts of Disruptive Behaviours

Two fundamental concepts included within DBs involve lateral violence and vertical violence (Layne *et al.* 2019: 155). Lateral violence occurs when health workers in a professional group who are sufferers of a state of dominance

clandestinely or openly direct their frustration inward toward each other rather than challenge the system that tyrannizes them. Those affected suppress their frustration and anger, then deal with these feelings through undesirable actions (Falletta 2017: para. 3 line 3; Fink-Samnack 2018: 1). This happens between colleagues. For example, radiographer to radiographer on the same level. In nursing, several theories on why lateral violence occurs have been postulated by many authors, including a power inequity where nurses do not feel appreciated and power resides with doctors (Stanley *et al.* 2007: 1248; Falletta 2017: para 3. line 3; Bambi *et al.* 2018: 52; Layne *et al.* 2019: 156). Similarly, in a study by Lewis *et al.* (2008: 90), radiographers reported feelings of under-appreciation, intimidation and un-importance because they felt overlooked, leading to the 'just the radiographer' syndrome. Furthermore, some authors have indicated role ambiguity as a source of frustration as radiographers are not reporting practitioners, and the general feeling is that power does reside with them in radiology (Rutter and Lovegrove 1995: 544; Thomas *et al.* 2017: 2). Medical dominance commands the workplace hierarchy, where poor professional autonomy has seen radiographers yield to the demands and decrees of radiologists (Lewis *et al.* 2008: 95). Sim and Radloff (2009: 3) state that radiographers have low professional standing; a low community profile; and a lack of professional respect from other healthcare professionals, resulting in low self-worth and indifference within the profession. Similar to nursing, this frustration can lead to radiographer-to-radiographer incivility.

On the other hand, vertical violence is defined as any act of inappropriate behaviour that occurs between two or more co-workers on different levels of the hierarchical system. For example, from chief radiographer to basic radiographer or radiologist to radiographer (Fink-Samnack 2018: 1). Vertical violence occurs between colleagues on different professional levels and may happen upward from subordinate to leader, or downward from leader to subordinates (Stanley *et al.* 2007: 1247; Layne *et al.* 2019: 156). Vertical violence behaviours are intimidating and reflect either an abuse of legitimate authority or an abuse of informal power by the radiography leader. The abuse of legitimate power includes behaviours such as irrational work assignments,

too much criticism and suppression of opportunities (Vessey *et al.* 2009: 299). Abuse of informal power by individuals or groups of co-workers are behaviours that undermine the work of a radiography leader. For example, talking to other radiographers or members of other healthcare professions about the leader in a negative way rather than speaking directly to the leader or influencing others to oppose the direction of the manager. Stanley (2010: 1) posits that vertical violence contrasts with bullying in that it does not require a pattern of recurring behaviour over half a year; it is not restricted to “top-down” behaviour; and it does not comprise physical violence.

2.3.2 Attributes of Disruptive Behaviours in healthcare

Attributes are phrases, themes or words typically used by authors to define the characteristics of a concept (Oliveira *et al.* 2016: 693). Some authors have used different phrases to refer to DBs in healthcare. For example, ILO *et al.* (2002: 1), Sisawo *et al.* (2017: 1) and Hattingh *et al.* (2019: 19) have used the phrase “Workplace Violence”. These authors have defined workplace violence as “Incidents where staff are abused, threatened or assaulted in circumstances related to their work, including commuting to and from work, involving an explicit or implicit challenge to their safety, well-being or health” (ILO *et al.* 2002: 1; Ng *et al.* 2009: 355; Sisawo *et al.* 2017: 1; Hattingh *et al.* 2019: 19; Sethole *et al.* 2019: 272). This study’s chosen definition describes DBs as “Any form of unprofessional interaction between healthcare team members, health care workers and/or patients and families that negatively affects patient care”. A closer comparison reveals that the term “Workplace Violence” emphasizes the wellbeing of health workers and is silent on the impact of the behaviours on patient wellbeing and organizational outcomes. The same can be said of other terms used by other authors in literature, like workplace incivility, workplace harassment or workplace bullying/intimidation (Felblinger 2009: 1; Kisner 2018: 36). On the other hand, the term “disruptive behaviour” takes into consideration the welfare of healthcare workers, patients and the organisation. Tikva, Kluger and Lerman (2019: 1) state that disruptive behaviour is sometimes referred to as workplace incivility, bullying, lateral/horizontal hostility, lateral/horizontal

violence or interpersonal conflict. For the purposes of this study, DBs are a broader theoretical construct made by the synthesis of a comprehensive range of behaviours described by many phrases/themes or attributes ranging from workplace violence to incivility, harassment, intimidation or bullying (Oliveira *et al.* 2016: 696; Smith, Morin and Eileen 2018: 219).

2.3.3 What does not constitute disruptive behaviour? The debate

The word disruptive behaviour is now trending, appearing in numerous hospital regulations and defined by many societies, organized healthcare bodies and outside governing agencies. Since DBs as stated above often involve a level of subjectivity, a possibility for the misuse of the label exists (Choctaw 2008: 1; Santin and Kaups 2015: 2; Vukmir 2016: 6). Reynolds (2012: 9) argues that human beings are complex creatures and hence expecting complete harmony in the workplace is naive. A single incident of DB, for example, does not render an individual disruptive. Instead, such a label should be reserved for a pattern of extremely inappropriate behaviour that is deep-rooted and habitual. Some authors, on the other hand, believe that even one incident of DB may have profound and lasting effects on collaborative relationships, as well as the general proficiency of a healthcare team (Riskin *et al.* 2015: 490; Riskin *et al.* 2017: 4; Rehder *et al.* 2020: 19). For the purpose of this study, the researcher agrees with the latter sentiment.

Secondly, the label 'disruptive' is not a diagnosis, hence it should not be applied to healthcare workers whose DBs are symptoms of a psychiatric clinical condition (Axis I psychiatric disorder). The Diagnostic and Statistical Manual of Mental Disorders update highlights that psychiatric disorders, like any other disease or condition, can be treated or even cured in certain instances. Therefore, the idea of linking DBs to a psychiatric diagnosis may not be an effective basis as a life-time tag (Vukmir 2016: 51). Thirdly, the label "disruptive" should not be used to reign on staff who constructively censure the health care system (Medical Council of New Zealand 2008: 1). When a healthcare worker's voice is disregarded, patient care is undermined. The definitions of DBs found

in literature are silent on sincere criticism or proposals offered in an attempt to enhance patient care (Santin and Kaups 2015; Vukmir 2016: 9). Lastly, judgments about a health worker's behaviour should be rational and impartial, not centred on favouritism, hatred or resentment amongst members of staff (Reynolds 2012: 9).

From a legal point of view, Choctaw (2008: 1) suggests that the definition of disruptive behaviour should be reliant on three vital elements, namely the degree of aberrant behaviour, its frequency and the circumstance under which questionable conduct occurred. The legal system discourages DBs of healthcare workers, but it does also offer explicit solutions to deal with these behaviours. Healthcare facilities and hospitals are given a choice in presiding over their workers' supervisory issues. Traditionally, the legal system has had no worry in dealing with quality issues in this area at the hospital level. Its focus is to question on a procedural level whether the healthcare worker by-laws were followed consistently in staff disciplinary measures, not essentially whether they were impartial or partial in substance. The judicial disposition concluded from case law precedents is to let this kind of decision-making to the specific healthcare facility or hospital (Vukmir 2016: 7).

2.4 DISRUPTIVE BEHAVIOURS IN HEALTHCARE: A GLOBAL CONTEXT

DBs in healthcare have become an unprecedented global problem transcending borders, work settings and professional groups (ILO *et al.* 2002: 1; Grissinger 2014: 74; Vukmir 2016: 1; Hamblin *et al.* 2016: 51; Rosenstein 2017: 61; Layne *et al.* 2019: 155; Rehder 2020; Keller *et al.* 2020). These behaviours have been noted in countries such as the United States of America (USA), Canada, Australia, Britain and New Zealand (D'Ambra and Andrews 2014: 735; Smith *et al.* 2018: 219; Rehder *et al.* 2020: 19). Doherty and Carino (2018: 1) list DBs as one of the top eleven critical issues facing healthcare leadership in recent times. The problem of DBs in healthcare was first described in 1994 by a British National Health Service research sample collected over a period of 5 years in a big healthcare location. This study established that 6% of

its older physicians (49 of 850) demonstrated behaviours resulting in a punitive investigation. The problems faced encompassed working with a poor attitude; DBs (33%); poor commitment to responsibilities (22%); incompetency (20%); deceit (11%); sexual issues (7%); unsystematic practice; and mediocre communication (5%) (Donaldson 1994: 1277). This study was however heavily criticised by several scholars in contention that the parameters used for investigation at the time were too basic to be rigorous. Furthermore, the study questions focused more on aptitude than on behavioural abnormalities in the workplace. In addition, local and regional disparities exist regarding behaviours that can qualify as “disruptive.” Despite these criticisms, this study was significant as it was one of the first to use the label “Disruptive” (Vukmir 2016: 23).

Disruptive behaviour in healthcare attracted the attention of healthcare leaders and providers due to mounting focus on the role of behaviour as a significant factor in poor organisational and patient outcomes in the mid-2000s (Porto and Lauve 2006: 1; Villafranca *et al.* 2018: 366; Layne *et al.* 2019: 154). To a large extent, healthcare organizations dedicated their primary energies in patient safety to teaching and to reforming clinical processes such as healthcare management. However, after getting no indication of a decrease in error rates due to these efforts, and similar to the aviation sector before it, the healthcare industry started to appreciate that human interaction is a significant factor that has a bearing on both workplace efficiency and patient safety (Porto and Lauve 2006: para. 1 line. 9). Current patient safety practices are clearly in disagreement with disruptive health worker behaviour, as hospitals and the industry as a whole have re-considered their established tolerance of such behaviour. Healthcare establishments are now dedicating energies to building an ethos of safety, in which every healthcare team member feels safe in articulating views concerning a patient's care plan and in which the fear frequently connected with reporting errors or not agreeing with those in positions of authority is abolished (Felblinger 2009: 13; Vannieuwenhuyzen 2016: 10; Doherty and Carino 2018: 1). The balancing notions of teamwork and high reliability organizations are now in vogue, emphasizing the significance of

developing cultures in which all healthcare team members work collaboratively and respectfully, checking and correcting each other's performance and providing input into the team's work and decisions, irrespective of rank and power (Porto and Lauve 2006: 2; Santin and Kaups 2015: 2; Kisner 2018: 38).

Concerns about the impact of DBs led numerous international medical organisations (Institute of Medicine, 2007; Institute of Medicine, 2000); the Joint Commission standard related to disruptive and inappropriate behaviour (Joint Commission 2008: 1; Commission 2016: 1); and other healthcare professions (ILO *et al.* 2002: 1; The College of Physicians and Surgeons of Alberta 2010: 2; ACOG 2017: 1; ICN 2017: 1) to escalate the urgency of knowing the antecedents, prevalence and consequences of DBs in different healthcare settings. The American College of Radiology Commission (ACR) on Human Resources and the Society of Radiographers (SoR) have shown commitment to healthy work environments, free from DBs, in radiography (Ian 2016: 1; Parikh *et al.* 2017: 1; Society of Radiographers 2020: 1). There is however a paucity of literature, especially in low resource settings, regarding the causes, consequences and interventions of DBs in radiography. This provided the motivation to carry out this study entitled, *“A framework to mitigate DBs involving radiographers at central hospitals in HMP”*.

2.4.1 Prevalence of Disruptive Behaviours

Despite efforts to improve healthcare worker conduct, a large number of existing studies in the broader literature indicate that DBs remain common (Porto and Deen 2008: 1; Zimmerman and Amori 2011: 8; Santin and Kaups 2015: 2; Vukmir 2016: 1; Riskin *et al.* 2017: 2), with these behaviours happening every day in many healthcare work settings (Villafranca *et al.* 2015: 31; Rosenstein 2017: 61; Cullati *et al.* 2019: 43; Rehder *et al.* 2020: 19). Over the past 20 years, a number of large-scale studies have been carried out to determine the prevalence of DBs involving all health workers. However, prominent studies in this study's view were those by the Institute for Safe Medication Practice (ISMP) and Rehder *et al.* (2020: 19). The ISMP carried out

a survey on DBs in 2003 that involved all health workers and they repeated the same survey after 10 years, in 2013, to compare the results. The 2013 study comprised 4,884 participants — at least double the participants in their 2003 study. With only minor changes to the number of doctors who participated in the 2003 survey, the participant profiles were comparable. To their surprise, despite ten years of emphasising safety, little progress had been made. The results painted a grim picture of an unhealthy work environment in which DBs continued to erode professional collaboration, which is vital to patient safety. Widespread DBs continued unabated and were discovered at all levels of the organization and amongst all healthcare professions (Institute for Safe Medication Practice 2014: 3).

The study by Rehder *et al.* (2020: 19) in the USA involved more than 9,000 healthcare personnel in 324 different work locations across 16 hospitals. At least 7,920 participants completed the survey. Their aim was to develop a short scale for assessing DBs in different work settings; assess the scale's psychometric properties and deliver guideline incidence data from the healthcare system; and evaluate relations between DBs and other authenticated measures of safety ethos and welfare. The overall prevalence for participants reporting exposure to incidents of DBs was 52% and 98% of work settings had a person who reported one or more of the DBs they had listed (Rehder *et al.* 2020: 20). The analysis of both these large-scale studies reveals that DBs are very common amongst all healthcare workers, hence an urgent need to find interventions to mitigate them. Furthermore, despite involving all healthcare workers in these studies, radiographers are poorly represented. The majority of participants in the ISMP study were nurses (68%), pharmacists (14%) and doctors (Institute for Safe Medication Practice 2014). On the other hand, in the study by Rehder *et al.* (2020: 19), radiographers were bundled together with surgical and laboratory technicians, with all three contributing a paltry 13% to the total sample.

As indicated above, much past research on DBs focuses mainly on physicians and nurses (Felblinger 2009: 1; Reynolds 2012: 8; Health Quality Council of Alberta 2013: 8; Riskin *et al.* 2015: 487; Vukmir 2016: 10; Riskin *et al.* 2017: 2; Kisner 2018a: 36; Smith *et al.* 2018: 219; Villafranca *et al.* 2018: 366). However, some scholars have realised a more nuanced scenario, including other healthcare occupations and administrative workers (Vukmir 2016: 49; Grissinger 2017b: 4; Rehder 2020: 20). Radiographers are not immune to this problem, but there is apparent paucity of literature on DBs involving radiographers (Brown *et al.* 2009: 479; Ng *et al.* 2009: 355; Fredrick 2014: 24). Indeed, radiographers have suffered from these behaviours silently (McArdle 2019: 1). This underscores the need for more studies that explore DBs involving radiographers in different settings, like this particular study. This added to the drive to carry out this study. Brown *et al.* (2009: 479), speaking on the gap, asserted that further studies are necessary to address how DBs might affect radiology. For any solid policy or regulation to be passed, there is a need for evidence on the extent of the problem. The failure of administrations to gather data on the prevalence of DBs and to provide policy-makers with evidence-based data is tantamount to failure to address the problem (Boafo *et al.* 2016: 100; ICN 2017: 1).

Disruptive behaviours as stated above are common in healthcare and have also been reported in both radiology and radiation oncology (Fredrick 2014: 22; Parikh *et al.* 2017: 1). However, the assessment of DBs in radiography has mainly focussed on typical themes such as intimidation, bullying, incivility and workplace violence, but not DBs in particular. The prevalence of these DB themes in radiography have been stated by a number of studies in Hong Kong where 61% of radiographers had been exposed to violence within the last 3 years, with 34% of targets having been exposed to DB incidents in excess of 5 times (Ng *et al.* 2009: 355). In a survey by Trad and Johnson (2014: 122), 63% of therapy radiographers across the USA were either currently employed in or had previously been working at an organization where workplace bullying occurred. In South Africa, Sethole *et al.* (2019: 272) reported three forms of abuse suffered by radiographers, namely physical abuse at 27%, verbal abuse

at 73% and emotional abuse at 46%. In Namibia, 100% of radiographers had suffered from workplace violence at the hands of patients (Hattingh *et al.* 2019: 19). The prevalence of DBs noted from the studies stated above reveal that DBs involving radiographers are all over 50% and are above the average of a large-scale study by Rehder *et al.* (2020: 19). This indicates that there is a serious overlooked problem of DBs in the radiography profession, which emphasizes the need for more studies like this one to explore this phenomenon in different radiography settings. A recent expose on DBs involving radiographers that has rocked the National Health Service (NHS) Ayrshire serves as a wake-up call to the radiography profession. At least 100 radiographers came out and claimed bullying by their managers. The case was described by the Society of Radiographers as a “final straw after years of bullying, harassment and victimisation” (McArdle 2019: para 1. line 1).

A series of recent studies have indicated that the most common form of DBs in healthcare is verbal abuse (Berman-Kishony and Shvarts 2015: 3; Bambi *et al.* 2018: 52; Cullati *et al.* 2019: 43). The IMSP study also found that verbal abuse in the form of negative comments about colleagues or leaders was the most common, encountered by 73% of the respondents at least once (Institute for Safe Medication Practice 2013: 2). Examples of verbal abuse include using threatening language, cursing, making condescending remarks, embarrassing somebody in front of staff and patients, rolling eyes in revulsion, snubbing to tutor, declining to assist others, disregarding attempts at conversations and intimidating others (Jericho *et al.* 2010: 2; Longo 2010: 2). Several existing studies specific to radiography also reveal a similar trend. A survey evaluating workplace violence involving diagnostic radiographers employed in government hospitals in Hong Kong indicated that amongst participants who had been exposed to violence, verbal abuse (97%) was most regularly reported (Ng *et al.* 2009: 355). The study by Hattingh *et al.* (2019: 21) in a public Namibian hospital found that most radiographers (92.3%) suffered cursing and yelling from patients. Furthermore, Sethole *et al.* (2019: 272) reported that the majority (73%) of her participants had also suffered from verbal abuse.

Perpetrators of DBs are frequently those who are at the top of the ladder of the organization, have been known to be experienced clinically and have been employed longer (Oliveira *et al.* 2016: 696). However, the perpetrators vary according to the healthcare profession. For instance, studies in nursing implicate doctors as the main participants in DBs (Zimmerman and Amori 2011: 5; Layne *et al.* 2019: 155). However, any one of the healthcare professionals who are employed in the organization, including radiographers, nurses, pharmacists, administrators, auxiliary staff personnel, or other non-physician staff members, can be a culprit (Lamberth 2015: 18). Studies in radiography have shown patients and their families to be the main perpetrators of DBs (Ng *et al.* 2009: 355; Hattingh *et al.* 2019: 20). Sethole *et al.* (2019: 272) report that patients were the perpetrators of physical abuse (14%), whereas colleagues were the chief committers of emotional abuse and verbal abuse. Higher exposure to DBs is stated by those who at the bottom of the ladder of power (i.e., younger and inexperienced clinicians, females, homosexual, nurses, medical residents or those working in private practice) (Burton 2010: 26; Jericho *et al.* 2010: 3). Wofman and Parikh (2019: 1) report a 28% prevalence of bullying in radiology resident respondents during their residency. The American College of Radiology has been prompted to collect data on resident welfare in order to get guideline data, as well as try to identify why some courses have more problems with reduced welfare than others (Harolds 2020: 2). Identification of the main perpetrators of DBs is vital for the formulation of context-specific measures to mitigate the problem, hence the need for this study in Zimbabwe.

2.4.2 Antecedents/Triggers of Disruptive Behaviours

Antecedents or triggers of DBs can be defined as healthcare work events, phenomena, conditions or environmental factors that contribute to an incident of disruptive behaviour (Oliveira *et al.* 2016: 693; Willis *et al.* 2018: 1641; Webster 2020). The effective analysis of and intervention in DBs starts after identifying the antecedents/triggers (Vukmir 2016: 23). A number of authors have distributed them into intrapersonal, interpersonal and

organizational/situational antecedents (Health Quality Council of Alberta 2013: 11; Villafranca *et al.* 2015: 6; Bae *et al.* 2016: 1).

Intrapersonal antecedents are present within the individual. Examples include:

- age or generational values,
- the impact of beliefs and diversity on opinions about femininity,
- narcissism to defend one against feelings of insufficiency,
- fatigue/burnout,
- low emotional intelligence,
- inherent prejudice,
- stereotypes,
- professional aptitude,
- substance abuse,
- previous experience with disruptive behaviour and
- level of education.

Interpersonal antecedents occur between individuals. Examples include:

- poor communication,
- differences of opinions,
- lack of teamwork,
- totalitarianism and
- questioning medical orders.

Furthermore, organisational or situational antecedents are characteristic of the place of work and were noted to include:

- dysfunctional organizational culture,
- lack of resources at work,
- poor remuneration,
- high workload,
- tolerance of DBs,
- highly stressful specializations,
- hierarchical healthcare structure,

- a feeling of status and privilege can cause those at the top of the ladder to treat others lower with disrespect, and
- DB policy vacuum and insufficient management support (Reynolds 2012: 12; Grissinger 2017a: 74; Rosenstein 2017: 1).

The advent of new technologies, newer modes of delivery and models of care; greater external inspection and answerability for performance results; and an emerging perception of loss of sovereignty and control have also been shown to provoke DBs. DBs can occur when professionalism is abrogated (Grocott and Gregory 2016: 3; Beattie *et al.* 2019: 116). Sisawo *et al.* (2017: 7) further cite the security gap as an issue making healthcare facilities place of DB, especially on the night shift when female healthcare workers are alone on duty.

In radiology, there are additional antecedents such as established stereotypes – high payment, relaxed hours and low patient interaction, which may undermine collaborative efforts in teams and trigger DBs. Radiology practice has changed into a day and night field with fluctuating payments: developing business pathways, amalgamation, increasing hospital service and value-based remuneration. In this age of commercialized medicine and productivity metrics and non-relative value unit (RVU), generating services such as more social relations, co-operative healthcare delivery, patient-centred care, multi-professional conferences and support of developing integrated practice units (IPUs) are enduring stressors. In addition is the decreasing sovereignty related with practice standardization, evidence-based recommendations, structured reporting, procedural checklists and an increasing reliance on integrated and effective information technology systems (Willis *et al.* 2018: 1640).

However, Longo (2010: 4) argues that when examining potential causes of DBs, it is significant to ponder the notions of authority and power. The perceptions of having power and/or yielding to power contribute to the enduring tolerance of DBs. Since doctors have long been in positions of authority within healthcare organisations due to their being seen as income producers for the hospital, their DBs may be overlooked or the doctor may be treated more

tolerantly than other healthcare members. This results in hospital managers perpetuating these negative behaviours by yielding to the demands of the doctor (Porto and Lauve 2006: 3). Mis-directed frustration subsequent from subjugation is often displayed as lateral violence (Bambi *et al.* 2018: 52) as described above, i.e., conflict from radiographer to radiographer. Although this status quo was accepted in the past, these doctors' conduct is now considered as DBs (Longo 2010: 4). However, this power shift in healthcare, due to the acknowledgement of the value of teamwork and individual responsibility, is resulting in physician frustration and loss of independence which can further trigger DBs (Porto and Lauve 2006: 3; Porto and Deen 2008: 6).

Some authors have advocated an official forensic psychiatric assessment of the perpetrator in the examination of the cause of DBs (Meyer and Price 2006: 72). The distinctive evaluation factors, both past and current performance, are then used to forecast the future path. This method basically tries to determine the perpetrators' suitability for duty for future endeavours. Forensic psychiatric examination frequently exposes psycho-social stressors and personality conditions that may be related to these DBs (Vukmir 2016: 49). Some authors suggest an association between DB perpetrators and a specific psychiatric diagnosis as described in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM- IV) (Reynolds 2012: 8; Vukmir 2016: 51).

2.4.3 Why disruptive behaviours persist?

Although the incidence of DBs is acknowledged as a long-standing problem by many authors, detailed and measurable information is not readily available as these behaviours go unreported for various reasons (Sherrill 2016: 17; Grissinger 2017: 74; Edmondson 2019: 77). Firstly, in the majority of cases, healthcare workers continue in a "vicious cycle" of suffering from such incidents often, but they do not frequently report them to their peers or managers (Oliveira *et al.* 2016: 696). This is referred to as the "code of silence", where healthcare workers are unwilling to report DBs. According to Vukmir (2016: 60), if the code of silence is accepted, it may result in acceptance and unresponsiveness to

DBs. The “code of silence” occurs because, according to Zimmerman and Amori (2011: 6), healthcare organisations have a long-standing culture that discourages interpersonal communications. Consequently, leaders may not be unaware of the severity of the problem.

A number of authors have recognized that colleagues are often unwilling to report DBs because of fear of retaliation and the stigma associated with “blowing the whistle” on a co-worker (ACOG 2017: para. 2 line 5; Sisawo *et al.* 2017: 9). Geoffrion *et al.* (2015: 195) have described this as the trivialisation of DBs. Nevertheless, if DBs are known, a lack of attention from authorities may in turn affect the case reporting (Longo 2010: 1; Rosenstein 2017: 1; Hattingh *et al.* 2019: 19). Leaders may be unwilling to challenge persons if they are influential or high-revenue producers, or they may not know how to deal with the problem. It is not a topic in the curricula of training programs, so leaders may hesitate to undertake a problem for which there is no apparent solution (Hickson *et al.* 2007: 1041; Institute for Safe Medication Practice 2013: 2). Villafranca *et al.*’s (2015: 367) study reveals that DBs were under-reported by 96.5% of their respondents, and never reported by 30.9% of respondents, while 79.9% of respondents expressed dissatisfaction with management’s reactions. Some health workers accept DBs, especially non-physical, as part of the job. Men are more probable than women to think that DBs are usual in their workplace and hence they are less likely to search for professional help (Geoffrion *et al.* 2015: 195; Beattie *et al.* 2019: 75; Hattingh *et al.* 2019: 19).

Having a written policy that emphasizes zero-tolerance of DBs, which is communicated to every staff member increases the reporting rate of these behaviours (Sisawo *et al.* 2017: 7). Several studies suggest that few organizations have policies or procedures for evaluating, documenting, quantifying and proving DBs (Porto and Deen, 2008; Longo, 2010; Zimmerman and Amori, 2011; Bambi *et al.*, 2018). This is what motivated the researcher to carry out this study: “*A framework to mitigate DBs at central hospitals in Harare Metropolitan Province*” because he noted that there was no policy at Central hospitals addressing DBs specific to radiographers. The aim of the study is to

find solutions that are specific to the radiography profession and settings to mitigate these insidious behaviours. In a study with nurses, Fagermoen (1997: 434) suggested 'that there is an institutionalized set of values inherent to the nursing profession that influences the development and sustaining of professional identity, which is shaped through professional socialization and work experiences'. Professional socialisation and identity therefore influences the perceptions and attitudes of members to work associated situations, DBs included (Geoffrion *et al.* 2015: 204).

2.4.4 Consequences of Disruptive Behaviours in healthcare

The consequences of DBs have been well documented by many authors (Porath and Erez 2009: 29; Schwartz 2014: 1; Oliveira *et al.* 2016: 694; Riskin *et al.* 2017: 1; Bambi *et al.* 2018: 51; Katz *et al.* 2019: 29). Oliveira *et al.* (2016: 697) define consequences as situations or events resultant from the use of the concept. In the case of DBs, several authors have classified their consequences into three orders, namely for the healthcare organization, healthcare worker and patient (Brooks *et al.* 2014: 39; Willis *et al.* 2018: 1644; College of Intensive Care Medicine of Australia and New Zealand 2019: 2; Layne *et al.* 2019: 154).

a. Consequences for the organisation

Firstly, DBs have been shown to have substantial adverse organizational effects, including worker absenteeism; job searching and turnover; reduced organisational pledge; loss of motivation for innovation; and increased healthcare use by the healthcare workers themselves (Felblinger 2009: 13; Jain *et al.* 2012: 326; Health Quality Council of Alberta 2013: 11). Brooks *et al.* (2014: 39) note that the safety and efficiency of the work environment in the healthcare institution is undermined, creating an unpleasant workplace. The organization can also incur substantial costs, as demonstrated in a study by Rawson *et al.* (2013: 1074), which assessed expenses at a 400-bed hospital and evaluated the financial consequences of DBs. They estimated that staff resignations, as well as treatment and technical errors, cost the hospital more

than one million US Dollars. This sentiment is echoed by Lamberth (2015: 18) who claims that DBs can cause organizations to lose approximately \$200 billion annually in lost output; increased sick days; increased medical claims; legal charges; plus staff resignations. The USA is facing an acute shortage of nurses, but studies reveal that as many as half of all nurse recruits will abandon their profession within their first 3 years of practice. Much of this can be attributed to DBs, at a cost of \$24 billion per annum (Frederick 2014: 587; Kisner 2018: 36; Smith *et al.* 2018: 219). However, with the arrival of rising expenses and declining reimbursements, most organisations have looked to DBs as a prospective area to reduce expenses (The Joint Commission, 2016: para. 2 line 2).

b. Consequences for the health worker

Secondly, many authors have reported that DBs undercut communication and collaboration; undermine individual contributions to care, chills staff self-confidence, increases staff resignations; and causes some to abandon their profession (Jericho *et al.* 2010: 7; Rosenstein 2017: 61). The link between DBs and mental, physical and psychosomatic health symptoms is well-known. Disruptive behaviour victims have been shown to experience fear, shame, fury, confusion, loneliness, self-hatred, sadness and a whole array of physical illnesses, such as burnout, sleeplessness, vomiting and high blood pressure. These feelings weaken a person's aptitude to think clearly, make sound judgments and speak out about concerns or questions (Jain *et al.* 2012: 326; Health Quality Council of Alberta 2013: 9; Grissinger 2017a: 74). A comprehensive literature review by Bambi *et al.* (2018: 51) to detect the prevalence of DBs amongst nurses revealed that mental and physical consequences can affect up to 75% of the victims. Moreover, 10% of participants exposed to incidents of DBs develop Post-Traumatic Stress Disorder symptoms. Bullying was found to be a predictive factor for burnout and showed a negative correlation with job efficiency. Furthermore, recipients of DB showed non-attendance 1.5 times higher in contrast to non-victimized peers. A

significant 79% of tormented nurses with length of service lesser than 5 years had abandoned the profession.

Several recent studies reveal that DBs have negative consequences for the procedural and diagnostic performance of individuals (College of Intensive Care Medicine of Australia and New Zealand 2019: 4). For example, two randomised control trials by Riskin *et al.* (2015: 487) and Katz *et al.* (2019: 750) revealed that DBs had a negative impact on the procedural and diagnostic performance of Neonatal Intensive Care Unit team members and anaesthesiology residents respectively. Furthermore, numerous other authors have also recognized that witnessing DBs affects behavioural measures of creativity, task performance and citizenship behaviour (Porath and Erez 2009: 29; Porath and Erez 2011: 508; Riskin *et al.* 2017; 1 Gilam *et al.* 2020: 1).

c. Consequences for the patient

DBs involving health workers have also been shown to adversely affect patient outcomes (Royal College of Surgeons of England 2021: 13). Healthcare workers themselves perceive an association between DBs and decreased patient safety (Keller *et al.* 2020: 1). Patients are the greatest losers in relation to DBs, as both the organizational and healthcare worker consequences are manifested as increased medical mistakes, poor patient contentment, avoidable patient injury and even mortality (Grocott and Gregory 2016; Willis, Friedman and Donnelly 2018). In a study looking at unsolicited patient complaints, patients of surgeons with more reports of DBs had more complications, with an adjusted rate of complications 14% higher for surgeons in the highest quartile of complaints, likened with the lowest quartile (Cooper *et al.* 2017: 522). It is the effect of these behaviours on the well-being and safety of patients that makes it a matter of urgency (Stewart *et al.* 2011: 93; Health Quality Council of Alberta 2013: 10; Keller *et al.* 2020: 1). In addition, patient confidence has also been undermined by DBs, making patients less likely to ask questions or provide important information that is crucial for their treatment (Grissinger 2017b: 74). However, DBs can also be exhibited by the patient,

patient's family members or escort, which also hampers the health worker's ability to provide safe and effective care (Zimmermann 2013: 1; Schwartz 2014: 1).

The consequences of DBs can also vary depending on the healthcare profession. In radiography, the consequences can be dire as the radiation protection of patients could be compromised. Radiographers are trained to operate radiation-producing imaging equipment safely; using protective apparatuses; following standard procedures or protocols; and selecting technical exposure factors that considerably reduce radiation doses to patients and the public (Alice *et al.* 2014: 2). Therefore, if radiation protection is undermined, the probability of stochastic effects like cancer occurring is increased (Bushberg *et al.* 2011: 792; Seeram *et al.* 2013: 331; Vañó *et al.* 2014: 21). A study by Trad and Johnson (2014: 12) reported that DBs involving radiographers increase the risk of compromised patient safety. Moreover, the radiographer being exposed to bullying and harassment in the NHS Ayrshire incident feared that such behaviours put patient safety at risk (McArdle 2019: 1). Research findings in other healthcare professions have documented the consequences of DBs. However, there is a paucity of literature exploring the consequences of these behaviours for patient safety in low resource setting radiography. Additional research is necessary to address how these behaviours might affect radiology (Brown *et al.* 2009: 479), providing motivation to carry out this study.

2.4.5 Published interventions

Numerous approaches have been described for mitigating DBs (Griffin 2004: 257; Hickson *et al.* 2007: 1040; Stewart *et al.* 2011: 97; Hutchinson and Jackson 2013: 25; Kisner 2018: 39; Ruplin and McCarthy 2019: 280). All methods are adapted to indigenous governing requirements, but they share some mutual themes. Creating a healthy work environment that does no harm to the physical or mental health, safety or welfare of healthcare workers is an ethical obligation (Burton 2010: 13). Recognised interventions to mitigate DBs within the healthcare setting include awareness and accountability;

documentation; official policies; academic interventions connected to conflict management and teamwork; inter-professional get-togethers to address behaviours; and leader intercessions (Longo 2010: 4; Health Quality Council of Alberta 2013: 15; Vukmir 2016: 62; Kisner 2018: 36). Prescribed policies offer the structure to support employers in providing a safe work environment for staff. However, without implementation, these policies are not useful (Layne *et al.* 2019: 154). Some establishments may have a written code of conduct and established formal disciplinary processes to be followed when healthcare workers are accused of violating behaviour norms, but there still does not seem to be uniform implementation and enforcement of these processes (Rosenstein 2015: 3).

Some scholars have employed cognitive rehearsal as a successful intervention to mitigate DBs in their backgrounds. With this method, for example, new radiographers, or any radiographer having problems with DBs, are given cue cards with the 10 most frequent types of DB in the workplace and the suitable reactions for challenging them. They then receive a 2-hour lecture about DBs and how to cope with them (Ruplin and McCarthy 2019: 280). A study in nursing by Griffin (2004: 257) found cognitive rehearsal to be effective and The American Nurses Association's position statement on DBs now includes Bullying Tip Cards, which can be used to challenge these behaviours. Simulation has also been employed to mitigate DBs. When using mock-ups within the hospital to teach radiographers skills for resolving problems in patient care, educationalists can include situations that also train them on how to deal with DBs. The mock-up would use suitable techniques to resolve both the clinical issue and the DB issue using suitable communication techniques. If communication with the radiographer is not enough to change the disruptive behaviour, then the next step would be to report it to the supervisor (Kisner 2018: 39).

Hutchinson and Jackson (2013: 25) established a mixed-intervention approach that is effective for mitigating DBs. They specified the following stages:

- giving individual support, education and arbitration between the culprit and the victim;
- taking corrective measures that discipline the committer and provide education for the victim to deal with hostility;
- putting into effect policies and penalties to deal with intimidation; and
- enabling social interface and intercessions that foster cooperative accountability in creating a safe and supportive ethos.

The Disruptive Behaviour Pyramid Model has been used by Hickson *et al.* (2007: 1040) at Vanderbilt University Medical Centre to mitigate these behaviours. The DB pyramid (**Figure 2.1**) puts the challenge of addressing unprofessional conduct into view, and functions as the base for how team members are trained to provide feedback to co-workers and juniors. The base of the pyramid is meant to convey that most healthcare team members conduct themselves as professionals and rarely exhibit behaviours that might be regarded as unethical. The professional behaviour should be acknowledged and remunerated. The subsequent block higher in the pyramid is branded as single unprofessional incidents. A professional will be suspected to have demonstrated such behaviours, and the validity of the accusation may not be clear straightaway. All healthcare specialists should be empowered and trained to admit and mitigate individual unprofessional incidents. Without any other evidence, almost all such incidents should be primarily treated as irregularities that, although unlikely to recur, should nevertheless be the subject of an informal intervention. The subsequent level up in the pyramid represents circumstances in which unprofessional behaviour or DBs re-appear. The awareness intercessions may be conducted by someone senior, or a peer. If the behaviour persists, then the authority intervention may be needed. Furthermore, if there is no change, then disciplinary interventions may be warranted. The above intervention is strongly reliant on leadership commitment.

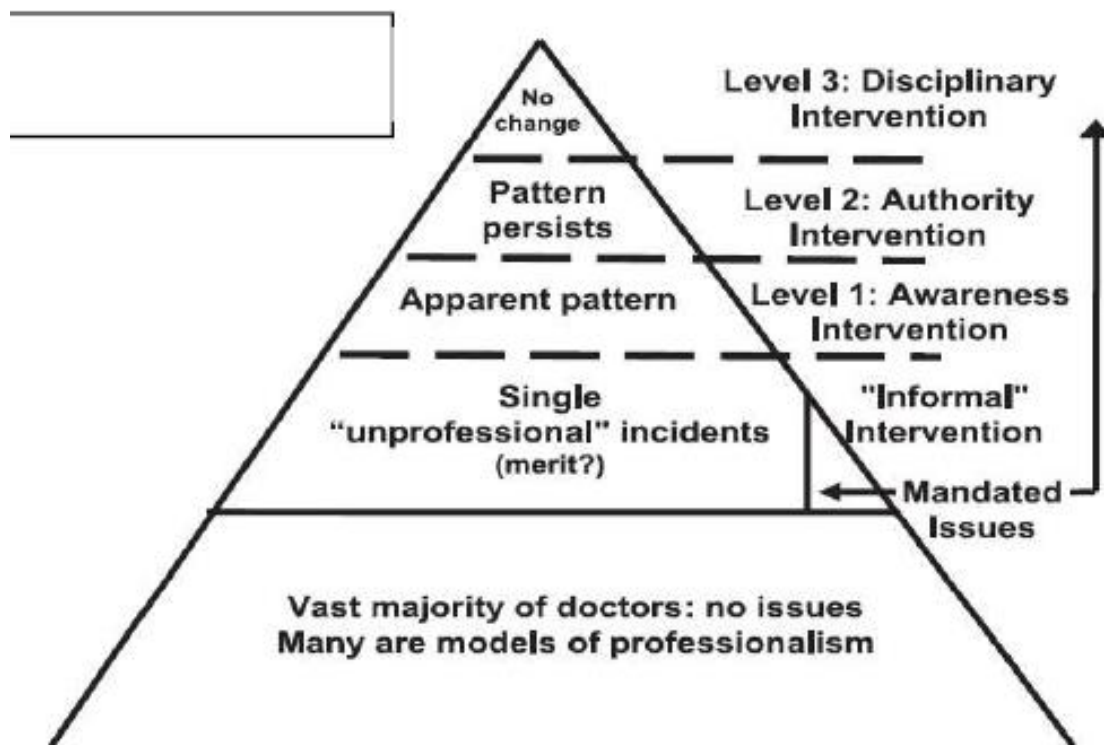


Figure 2.1: A disruptive behaviour pyramid of identifying, assessing and dealing with unprofessional behaviour

Source: Hickson *et al.* (2007)

Although these interventions individually provide strategies to mitigate DBs, a specific strategy mitigating the intricacy of DBs, in particular reference to radiation safety and protection, is lacking in the published literature. A study by Berman-Kishony and Shvarts (2015: 2) points to the differences in disruptive behaviour patterns, antecedents and consequences amongst hospital departments and their impact on the selection of tools for effective mitigation. Furthermore, “for healthcare professionals, expectations of behaviour are also set by their regulators and professional associations through documents such as a code of ethics, code of conduct and standards of practice. These are useful resource documents for organizations when setting expectations of behaviour: a profession’s standards of behaviour will always take precedence over workplace standards for individual healthcare professionals” (Health Quality Council of Alberta 2013: 15). This dissertation therefore seeks to fill the gap in

knowledge by addressing the problem of DBs involving radiographers at central hospital radiography departments in Harare Metropolitan Province, Zimbabwe.

2.5 ROLE OF LEADERSHIP: DISRUPTIVE BEHAVIOURS AND PATIENT SAFETY

Numerous studies in the broader literature have investigated the role of leadership in influencing patient safety outcomes (Burton 2010; Fardellone *et al.* 2014; Willis, Friedman and Donnelly 2018). In most healthcare institutions, leadership's major concern is to be answerable for high-quality care while safeguarding the safety of employees, patients and guests (The Joint Commission 2017: 1). Indeed, the ethos of safety in an organisation starts with leadership, because leadership drives ethos and ethos drives behaviour. Leaders impact culture by building structure, setting anticipations, teaching others and demonstrating superintendence (International Association of Oil & Gas Producers 2013: 2). DBs can negatively affect patient care and safety, hence preventing and managing DBs is critical to optimizing performance (Fardellone *et al.* 2014: 506; Willis *et al.* 2018: 1639). As the safety field has progressed, there is an emergent recognition of the role that organizational leadership plays in prioritizing safety through actions such as instituting a culture of safety, responding to patient and staff concerns, supporting efforts to improve safety and monitoring growth (Jain *et al.* 2012: 330; Millar *et al.* 2013: 738). Fortunately, it is a well-known fact that leadership skills can be developed (West and West 2015: 4). Burton (2010: 26) argues that the leadership style adopted influences the safety outcomes in work environments. Indeed, research by Barling *et al.* also found that leadership style impacts occupational safety through the effects of perceived safety climate, safety awareness and safety-related proceedings. Healthcare institutions can benefit by pursuing improvement; accepting the qualities of a learning organization; and investing in the development of current and future healthcare leaders (Donnelly 2017: 17). Since handling DBs is a resource-intensive undertaking, leaders have a remarkable opportunity to optimize performance through mitigating these behaviours (Willis *et al.* 2018: 1640).

Managing disruptive staff behaviour is probably the most important, taxing and laborious responsibilities met by today's healthcare leaders (Health Quality Council of Alberta 2013: 15; Vukmir 2016: 101; Doherty and Carino 2018: 4; Willis *et al.* 2018: 1645). DBs do not happen in a void. Consequently, it is imperative for it to be understood from a broader perspective of individual and system performance. The behaviour offers a clue to the presence of fundamental system or individual problems in the medical care process. The trademarks of great management comprise clear written policies, healthcare worker champions, robust supervisory leadership and the enthusiasm of managers to attempt novel tactics to help staff develop strong skillsets to attain and uphold a healthier work environment (Vukmir 2016: 102). A significant area in which healthcare leadership can directly address safety issues is through mitigating disruptive and unprofessional behaviour by clinicians. The Joint Commission issued a 2017 sentinel event alert highlighting the significance of leadership commitment in improving patient safety (The Joint Commission 2017: 1). The alert advocated for healthcare leaders to take deliberate actions to improve safety within their organisations, including improving the ethos of safety and instituting a just culture for mitigating errors. Doherty and Carino (2018: 5) argue that confronting the problem of DBs ahead of time will help managers and health workers to identify and respond to incidents before they become a liability.

Radiographers are located in an environment of continuous change due to rapid advances in technology; the extension of roles and skills plus knowledge they are required to have; along with changes to the conventional organisation and the delivery of radiography services. Accordingly, a changing world requires a novel paradigm of leadership. If leaders in this environment are to be effective, they need to appreciate the nature of change, external and internal influences on their work environment, the power dynamics intrinsic within it and their own psychological and emotional reactions to these factors (Yielder 2006: 305).

2.6 DISRUPTIVE BEHAVIOURS IN LOW RESOURCE SETTINGS

Reported rates of DBs are generally higher in low resource settings like Africa than other continents, ranging from 62.1% in Gambia to 73% in South Africa, 77% in Nigeria, 86.1 in Egypt and 100% in Namibia (Trad and Johnson 2014: 122; Parikh *et al.* 2017: 2; Sisawo *et al.* 2017: 1; Hattingh *et al.* 2019: 19). Owing to globalization and changes in the nature of work, these behaviours are also increasingly prevalent in low resource settings. The joint ILO/ICN/WHO/PSI (ILO *et al.* 2002: 1) research findings indicate that predisposing factors include understaffing; a deep-rooted hegemonic gender culture; acceptability of DBs; working with insufficient resources, including inappropriate equipment; and a style of management based on intimidation. Whilst in high resource settings people are becoming more aware of the detrimental effects of psychosocial risks such as DBs and are subsequently learning how to prevent and manage them, there is still a paucity of in-depth studies in developing countries (Jain *et al.* 2012: 326). The shortage of such studies is partly what gave motivation to carry out this study.

Africa is known for its shortage of radiographers, radiologists and other health care workers, as well as a paucity of resources and poor remuneration (Imhoff 2011: 1; Attwood 2015: 1; Fornell 2017: 1; Mwalimu 2017: 1; Oriana 2020: 1). Prioritization affects human resources in radiography in low resource settings. Disciplines like surgery, paediatrics and obstetrics, are given priority and hence, usually have specialists in nearby central hospitals, but not in radiology. Radiographers and sonographers are often fewer. In some remote areas, there are no qualified radiographers. There is usually just ancillary staff who have trained on the job. For a majority of the countries in low resource settings, human resource shortages are the limiting factor to achieving the Millennium Development Goals (MDGs) (Kawooya 2012: 2). More than 60% of sub-Saharan African countries fall short of the WHO standard of at least of 23 Health Care Workers per 10000 population. Despite the WHO Global Code of Practice for the international enlistment of healthcare professionals, migration from Africa is rampant. In half of the countries in sub-Saharan Africa, more than 30%

of the health workers trained locally migrate internationally, sustaining the problem of understaffing. Insufficient staffing has been shown to be a principal contributor to job-related stress amongst sonographers (Miller *et al.* 2019: 46), which is in turn a principal factor in the exhibition of DBs. In Africa particularly, healthcare outcomes will be compromised if healthcare workers, already in short supply, leave their profession as a result of DBs (ILO *et al.* 2002: 3; Skuturna 2006: 1; Kasper and Bajunirwe 2012: 973; Poppe *et al.* 2014: 1).

The health priorities in low resource settings are more focused on the prevention of infectious diseases like HIV/AIDS and Malaria. Consequently, imaging may be less prioritized. In addition, many public hospitals in Africa are dependent on aid grants to purchase and service radiology equipment. This means that even after acquiring equipment, the challenge is the cost of maintaining it, leading to permanent breakdowns. This may explain the scarcity of imaging equipment in Africa. Furthermore, the existing imaging equipment is less sophisticated, older and in a poor functional state (Corr 2003: 1; Kawooya 2012: 4). A study by Kabongo *et al.* (2015: 1) to examine all recorded South African diagnostic radiology equipment compared with published international data revealed that although South Africa's total imaging ability is better than that of other sub-Saharan Africa countries, it was less than that of all Organisation for Economic Co-operation and Development (OECD). Furthermore, while South Africa's radiological assets are almost equal those of England, they are significantly lower than the UK. Shortages of appropriate and well-functioning equipment coupled with poor remuneration may be a source of frustration for radiographers. These frustrations and system failures often produce a tipping point by which a person is pushed over the edge into complete disruptive behaviour (Grissinger 2017b: 74).

Furthermore, the consequences and tolerability of DBs vary according to the cultures, morals and values of healthcare practitioners entrenched in their communities and revealed in the healthcare environment (Chappell and Di Martino 2006: 53). Boafo *et al.* (2016: 99), for example, contend that the leniency of Ghanaian people towards sexual abuse, hegemonic gender

customs, the hierarchical nature of hospitals and absence of written policies on DBs explain the relatively higher incidence of DBs. They further suggest that the developed nature of the region (setting of their study), congestion in its hospitals, staff shortages and poor infrastructure result in frustration and discontent of patients and their escorts. This in turn increases their (patients and their escorts) propensity to be verbally abusive as a means of venting their frustration and discontent. This sentiment is also shared by Hattingh *et al.* (2019: 19) who found that long waiting times, overcrowding and a failure to meet the expectations of patients and their family members were amongst the top causes of patients' disruptive behaviour. However, the perception and understanding of DBs may vary amongst different cultures. For that reason, in order to increase the success in addressing DBs, tailor-made interventions determined by the setting's culture, specific statutes, clear pathways for education and remediation, and processes and procedures should be adopted (ILO *et al.* 2002: 2; Vukmir 2016: 40; Berman-Kishony and Shvarts, 2015: 2). This study attempts to mitigate DBs in the context of the researcher's setting, i.e. radiography in a low resource setting country, Zimbabwe.

2.7 DISRUPTIVE BEHAVIOURS IN HEALTHCARE: A ZIMBABWEAN CONTEXT

Governments wield more control than individual enterprises or employees, or even groups of workers or groups of enterprises. Disparities in the delivery of economic and political power have a profound effect on the work environment and the health of employees. Regimes create the broader context of employment that influences not only working conditions, but also health disparities (Burton 2010: 69). The healthcare industry is laborious and its success depends on, amongst other things, the behaviour of the frontline worker in the hospital. Healthcare employees' motivation, demonstrated in their behaviour in the workplace, significantly impacts health outcomes.

Zimbabwe has been characterised by labour disputes between the government and public healthcare workers, including radiographers, since the mid-1980s. (Mutizwa-Mangiza 1998: 3; Ncube 2016: 1; Nyoka 2017: 1). The health workers

have repeatedly cited a lack of consumables, inadequate and malfunctioning equipment, understaffing and poor remuneration as reason for their discontent (Chingono and Busari 2019: 1; Ndebele 2020: 1). For instance, in 2008, all government healthcare workers earned less than US\$1 per month (Khidia 2018: 1). Mutizwa-Mangiza (1998: 25) asserts that remuneration is the single most significant factor influencing health worker behaviour in the workplace. Despite the Labour Act of Zimbabwe (Ministry of Justice 2006: 10) making provision for a safe working environment, fair remuneration and right to collective bargaining, the government of Zimbabwe has used intimidation to deal with collective bargaining on several occasions, including the dismissal of radiographers and other health workers (Paul 2018: 2; Gonye and Mushava 2019; Zimbabwe 24 2019: 4). This culture of intimidation is replicated in the different healthcare institutions in Zimbabwe, with the consequence of increasing frustrations amongst healthcare workers. Displaced frustrations and unresolved conflicts have been shown to trigger both lateral and vertical violence amongst healthcare workers belonging to a similar profession, e.g. radiographer against radiographer and manager to radiographer respectively (Oliveira *et al.* 2016: 699; Grissinger 2017: 75; Layne *et al.* 2018: 160).

According to Mayhew (2017: 1), low remuneration can have overwhelming effects on workers in terms of fury, discontent, low motivation and stress. Firstly, when workers feel that they should be receiving more money, they display signs of general frustration. Consequently, their workplace interactions are negatively affected, mainly the professional relations they have with other colleagues. Secondly, workers who are underpaid may experience stress due to financial concerns owing to the inability to take care of regular responsibilities. This kind of stress distresses families and can creep into the place of work, causing poor motivation and productivity. Frustration can negatively affect self-esteem and overall well-being. Thirdly, low motivation is frequently associated with worker dissatisfaction. Workers who are disgruntled with working conditions and remuneration can exhibit indifference towards their work duties and begin to question their commitment to the employer. Low morale can turn into feelings of despondency and unimportance, which can be unfavourable in the

workplace. In certain cases, workers who internalize extreme hopelessness and unimportance may be involved in workplace disruptive behaviour more often than other employees. From a Zimbabwean perspective, traditional factors such as the extended family make it necessary for Zimbabweans to focus more on monetary issues than other issues. Hence, factors such as the job itself, job security, training and career progression opportunities, supervision and recognition, even if met, will not improve worker motivation as long as the money is observed to be inadequate (Mutizwa-Mangiza 1998: 23).

The abysmal working conditions in Zimbabwe have driven 20% of healthcare workers abroad each year, leading to gross understaffing, especially in the public sector (Kidia 2018: 1). The vacancy rates in the public sector peaked between 2008 and 2009, reaching up to 43% (Mashange *et al.* 2019: 2). Healthcare worker resignation can severely paralyse the healthcare system's capacity to provide satisfactory care, as the more experienced workers migrate because their skills are wanted. Understaffing increases burnout and fatigue, further de-moralising the remaining workers. To manage the increased workload, workers will usually lower their standard of care. Patients' complaints increase as the remaining inexperienced workers are inefficient in carrying out their duties (Willis-Shattuck 2008: 2).

Furthermore, deep-rooted cultural beliefs amongst the Zimbabwean population can promote DBs in the workplace. Heggertveit-Aoudia (2012: 1) notes that a number of ethnic factors and beliefs impact the way in which employees interrelate, including national ethos, gender norms, corporate values and numerous communication styles. These cultural backgrounds often impact on the culture of their work environment with negative outcomes sometimes, hence they should be nurtured and kept healthy (Anon 2020: 1). Zimbabwe has a multi-faceted culture, with a traditionalist conservative, largely rural backdrop, which has super-imposed on its healthcare systems. For example, respecting one's elders is ingrained in the culture of Zimbabweans (Booty 2017: 1). The implication thereof is that older healthcare workers are likely to be unquestioned if they act in a disruptive manner. Studies by Hamblin *et al.* (2016: 1) and Turner

et al. (2019) showed that perpetrators of DBs were more likely to be older or have more traditional power than their targets. In the name of respect, younger radiographers or other healthcare workers may be forced to stomach the abuse.

The Zimbabwean constitution (GoZ, 2014) stipulates gender equality. Nevertheless, in terms of the by-laws, there are many parts where women are discriminated against, such as laws governing the conditions of part-time work, inheritance law and the fact that bride prices (lobola) are still permissible. This discrepancy between the constitution and the law perpetuates hegemonic gender norms that may be revealed in the healthcare environment in the form of sexual harassment or condescending remarks by male colleagues (Boafo *et al.* 2016: 99).

Due to the persistence of traditional values, trust in medical doctors appears less threatened in Zimbabwe than in Western societies. This does however mean that there is a risk of its abuse in circumstances where the doctor encounters conflicts with other healthcare professionals (Mielke 2014: 13). The traditional organizational hierarchy where doctors are regarded and treated as a separate self-ruling entity, with organizations afraid of crossing boundaries, is endemic in Zimbabwean healthcare. It creates the impression that physicians are untouchable and makes it difficult for hospital management to carry out the necessary disciplinary action. Furthermore, according to Mutizwa-Mangiza (1998: 23), the high regard and respect with which doctors are viewed by many Zimbabweans forbids answerable behaviour. A discontented physician who is constrained by the work environment and regarding himself/herself as economically depressed is likely to show disrespect to those separated from them by a large economic, information and social gap, principally if she or he knows that they will probably not sue or complain.

The dominance of the doctors in the Ministry of Health and Child Care is a cause of intra-professional conflict and poor morale amongst other healthcare workers and is contrary to team collaboration, which is vital for efficient healthcare provision. The Ministry of Health and Child Care must open senior

positions to the most competent, experienced and qualified health cadres, rather than preserving them for physicians only. Most of the emigrant doctors selected for senior positions at district hospitals are less experienced than other healthcare personnel and have a high resignation rate, which disturbs the effective provision of healthcare (Mangiza-Mutizwa 1998: 23).

Disruptive behaviours of physicians that bring in more revenue may be ignored because of concern about the perceived consequences of antagonising them (ACOG 2017; Mugabe 2018: 1). Another challenge in Zimbabwe concerns the idea of regulation. For many reasons, stricter adherence to practice guidelines and standards of care has become the norm in most developed countries, arguably leading to improvements in medical care. Although there is a willingness to improve ongoing education in Zimbabwe, accountability for professional activities remains minimal. Without the threat of litigation or institutional investigation, there is little external incentive for professional rectitude, and much in the way of circumstances to hinder it (Mielke 2014: 14).

The impact of DBs on patient safety have been emphasised by many authors (Rehder *et al.* 2020: 19; Kisner 2018: 36; Tatebe and Swaroop 2018: 74; Beattie *et al.* 2019; 2; Harolds 2020: 2). Nevertheless, to the best of the researcher's knowledge, there is no available information on DBs towards Zimbabwean radiographers and the consequences of radiation safety in published literature. There is also no incident reporting procedure or policy to monitor and prevent DBs in the Zimbabwean radiography workforce. A lack of policies and legislation addressing DBs places radiographers at regular risk from these perilous incidents and consequently jeopardises patient radiation safety. The Zimbabwe Patients' Charter of Rights adopted in 1996 and the Radiation Protection Act (Ministry of Health of Zimbabwe 2013:3) advocates for the rights of patients to safety during radiography. On the other hand, the International Council of Nurses (2017: 1) maintains that the failure of organisations to collect data on the incidence and frequency of DBs against health workers and to provide policy-makers with evidence-based information is equivalent to an inability to address the problem. This study seeks to provide data on the extent

of DBs in the radiography profession in Zimbabwe, which can be used as a baseline for further studies in future. In addition, the study seeks to develop a context-related framework to mitigate these behaviours.

2.8 PATIENT PROTECTION AND SAFETY IN RADIOLOGY

The health benefits realised by men from the radiographic use of ionising radiation are well recognized (Alice *et al.* 2014: 2; Bushong 2017: 6; ARPANSA 2020: 1). However, the radiation used in radiography has adequate energy to cause ionisation when it interacts with human tissue. This has the ability to inflict injury on the irradiated soft tissue and result in cell death or cell mutation (Quinn 2019: 761). As the radiation dose increases, the more likely it is that tissue damage will happen. This is known as a stochastic effect, which occurs in low-dose examinations such as radiography where there is no safe limit of radiation dose based on the 'Linear No-threshold' model. The Linear No-threshold model is regarded by numerous supervisory and advisory groups as a scientifically valid approach, hence it buttresses radiation protection and safety in radiography where the dose should be kept as low as reasonably achievable (ALARA) (Bushberg *et al.* 2011: 852; Alejo *et al.* 2018: 1). Radiography is the largest artificial contributor of ionising radiation given to the broad populace. It contributes 15% of the radiation dose from both natural and man-made sources and 90% of the man-made source alone (Alqahtani *et al.* 2019: 39). In general, the exposure of the global population to ionizing radiation is rapidly increasing due to the advent of newer technologies. For example, research shows that while digital radiography techniques have the ability to decrease patient doses, they also have the ability to considerably increase them.

The chief cause for the increase is the wide dynamic range of digital radiographic systems, which permits over-exposure with no corresponding result in image quality. Hence, if careful attention is not paid to the radiation safety issues of digital radiography, the medical exposure of patients will increase considerably without a concomitant benefit (Amis *et al.* 2007: 272). Numerous countries are now experiencing population doses from medical

practices of radiation that exceed those from natural background radiation for the first time in history, and have fully obscured those from other man-made sources. There is thus an ongoing and strong need to find multifaceted new ways to improve patient and staff radiation safety (Vano and Fernandez Soto 2007; Sinnott, Ron and Schneider 2010; WHO 2020).

Radiographers have a continuing responsibility to ensure radiation protection and safety during all radiographic procedures. They fulfil this obligation by adhering to established radiation protection programs designed mostly by other technical professionals like Physicists and Biomedical engineers (Alice *et al.* 2014: 10). The implementation of radiation safety in radiography has predominantly focussed on the technical aspects (e.g. Dose Reference Levels and Exposure Indicators), while the behavioural or humanistic dimension has been overlooked. This has resulted in the establishment of a body of knowledge that is essentially technical, one-dimensional and quantified (Squibb 2013: 104). However, the global healthcare industry has begun to appreciate that human interaction is an important factor that has a bearing on both workplace efficiency and patient safety (Porto and Lauve, 2006). Recent evidence shows that DBs have adverse consequences on the diagnostic and procedural performance of health workers (Riskin *et al.* 2015: 487; Riskin *et al.* 2017: 1). Information-sharing DBs, which are a result of human interaction, have been shown by many researchers to undermine patient safety (Rosenstein 2015: 1; Oliveira *et al.* 2016: 690; Grissinger 2017: 3; Layne *et al.* 2019: 155).

DB is a concept that articulates human behaviour, the work process in healthcare and patient safety (Oliveira *et al.* 2016: 691). For example, a study in Jordan revealed that leadership commitment, relationship harmony, continual improvement and worker empowerment significantly affect safety performance by workers (Al-Refaie 2013: 169). Simons *et al.* (2015: 29) reveal that multifaceted approaches to patient safety are growing in popularity globally. In their study, patient safety outcomes improved due to lean management activities combined with an organizational restructure. Clear policies and organizational leadership capacity are needed to ensure sustainable and

significant improvements in radiation safety in radiography (WHO 2020). It is therefore apparent that research that focuses on the behavioural side of enhancing patient radiation safety is necessary. This study attempts to bridge this gap by formulating evidence-based interventions using a mixed methods approach to enhance radiation protection in Zimbabwean radiology departments.

2.9 CHAPTER SUMMARY

DBs may have a profound impact on radiation patient safety if they are not addressed in radiology. Compelling evidence to carry out this study can be summarized as:

- a. Despite efforts to improve health worker conduct, DBs remain common happenings as frequently as daily in many healthcare settings, radiography included;
- b. The global situation reveals that many organizations/enterprises and governments have not understood the benefits of healthy work environments, or lack the knowledge, tools or skills to improve things (Burton 2010: 7);
- c. Most research to date has concentrated on assessments of DBs from the perspective of nurses, physicians and pharmacists, but has not examined consequences for other healthcare workers, like radiographers in their unique work settings;
- d. There are relatively few studies in radiography specifically, let alone in low resource settings like Zimbabwe. Most researchers advocate tailor-made interventions that are determined by the characteristics of the setting. For example, codes of conduct, culture and bylaws;
- e. Furthermore, while some studies have looked at the consequences of DBs, a few looked at patient safety. Radiography is unique in that it has extra safety measures that have to do with radiation and hence patient safety is of paramount importance; and

- f. It is also worth noting that most research on radiation protection and safety in radiography have been done from a technical point of view, while the behavioural aspects (including DBs) have been overlooked.

The next chapter will present the theoretical framework.

CHAPTER 3: THEORETICAL FRAMEWORK

3.1 INTRODUCTION

The preceding chapter revealed that DBs have negative consequences on patient safety and leadership should not tolerate them if a healthy work environment is to be created. In the case of radiography patients, radiation safety is of paramount concern. Researchers are advocating for a multifaceted approach that involves clear policies and organizational leadership capacity to enhance patient safety in radiography and healthcare in general (Simons *et al.* 2015: 29). A theoretical framework is therefore essential in order to fully examine the impact of effective leadership in Radiology departments with regard to DBs and patient radiation safety. The framework is premised on an available theory in a field of study that mirrors, or is related to, the hypothesis of a study. Adom *et al.* (2018: 438) describe it as a plan that is frequently 'borrowed' by the scholar to build his own research inquiry. This study will employ the Authentic Leadership Theoretical Framework to allow the role of RMs in creating healthy work environments to be captured and examined. The rationale for the selection of this theory, as well as how it applies to this study, is outlined in this chapter.

3.2 ESTABLISHING THE NEED FOR A HUMANISTIC THEORETICAL FRAMEWORK

Literature shows that the implementation of radiation protection and safety practices in radiography have always been done from a technical point of view. For example, the use of Dose reference Levels and Exposure Indicators (Seeram *et al.* 2013: 331; Järvinen *et al.* 2017: 1; Roch *et al.* 2018: 68; Lewis *et al.* 2019: 38; IAEA 2020: 1), leading to the establishment of a body of knowledge that is mostly technical, unidimensional and quantified (Squibb 2013: 104). Research into radiography has tended to be controlled by Physicists and other clinicians (Adams and Smith 2003: 193; Decker and

Ipshofen 2005: 265). In addition, the behavioural or humanistic factors in patient safety have been largely ignored (Kilner and Sheppard 2010: 127; Pham *et al.* 2012: 452). However, the technical point of view does not answer all questions related to radiography practice, in particular the “human” side of the profession, involving the patient encounter and staff working interactions (Munn *et al.* 2013: 47; Riskin *et al.* 2015: 491). Radiography is not merely about technical skills since technical proficiency is always entrenched within a framework of meaning. “As a profession, radiography takes place at the boundary between technology and people and, as such, is a humanistic endeavour” (Squibb 2013: 105). There is already substantial research showing that human factors such as DBs and leadership can have a profound effect on safety behaviours in the workplace (Leape and Fromson 2006: 107; Porto and Lauve 2006: 1; Neal and Griffin 2009: 15; Hystada *et al.* 2013: 42; Borgersen *et al.* 2014: 394; Oah *et al.* 2018: 427).

Neal and Griffin (2009: 16) found that trust in management motivated individual workers to engage in safety behaviours by abiding by safety protocols and regulations in the workplace. Furthermore, safe work operations exceed technical improvements, safety protocols and standard operating procedures, but must also include the psychological environment (International Association of Oil & Gas Producers 2013: 2; Borgersen *et al.* 2014: 435). Numerous studies have shown that DBs affect working memory, namely the “workbench” of the cognitive system where most analyses, planning and management of objectives take place (Engle and Kane 2003: 150; Porath and Erez 2009: 29; Rafaeli *et al.* 2012: 931; Katz *et al.* 2019: 750; Gilam *et al.* 2020: 1). Therefore, exposure to incidents of DB can negatively affect the cognitive functions necessary for proficient medical and diagnostic procedural performance (Riskin *et al.* 2015: 487; Riskin *et al.* 2017: 1). Accordingly, these behaviours could consequently negatively affect the implementation of radiation safety procedures and protocols by radiographers. This is significant with the advent of digital radiography where, due to the “uncoupling effect”, it is difficult to recognise when a radiation dose that is higher than required is given (Romans 2011: 60; Don *et al.* 2012: 1337; Bushong 2017: 292; Seeram 2019: 55).

Moreover, mostly radiographer disposition is crucial in radiation safety (IAEA 2011: 7; Quinn 2019: 543). Disruptive behaviours as a cause of compromised patient safety has captured the attention of healthcare providers and leaders globally. This is owing in part to the increasing attention on the role of humans/relational as a contributing factor in poor patient healthcare outcomes (Leape and Fromson 2006: 107). The healthcare industry has begun to appreciate that human interaction in the work environment is a significant but largely overlooked source of faults (Porto and Lauve 2006 para. 1 line 6).

Emerging patient safety practices are evidently at loggerheads with DBs, which has caused healthcare establishments to reconsider their established leniency towards such behaviours. Progressively, healthcare administrations are dedicating efforts to building a culture of safety, one in which every healthcare team member feels safe in expressing opinions concerning a patient's management and in which the fear normally associated with rank or power is removed. The complementary notions of professional collaboration underscore the significance of developing cultures in which all healthcare team members work collaboratively and respectfully, monitoring and correcting each other's performance and giving input into the team's work, irrespective of rank and power (Porto and Lauve 2006: para 2).

Therefore, in order to formulate a context to mitigate the consequences of DBs, it was necessary to find a more suitable theoretical framework for this study. Many scholars also recommend that mixed methods research should be guided by the use of a specific theoretical perspective based on a conceptual or theoretical framework (Evans *et al.* 2011: 288; Creswell 2013: 198; Alavi *et al.* 2018: 528). Evans *et al.* (2011: 289) asserts that “theoretical frameworks can provide navigational devices through the “low, swampy ground” of practice disciplines in studies concerning complex human behaviours that invite multiple, relevant, complementary perspectives and methods of investigation that take into account the importance of causal mechanisms”. DB is complex, interactive, dynamic and multifactorial in nature (Walrath *et al.* 2010: 106; Cai *et al.* 2011: 2; Oliveira *et al.* 2016: 696), making the phenomenon challenging

to analyse or predict (Johnson 2011: 60; Gillam 2014: 2). This study thus employed the Authentic Leadership (AL) theory to allow the complexity of the impact of effective leadership in radiography departments with regard to DBs and patient radiation safety to be adequately captured and examined. AL's vital relationship to healthy work environments impacts staff well-being and patient safety (Raso 2019: 19).

3.3 AUTHENTIC LEADERSHIP THEORY

Authentic leadership is a developing leadership theory that is applicable in healthcare settings because it relates to positive outcomes for healthcare workers and organizations (Fallatah and Laschinger 2016: 26; Bergstedt and Wei 2020: 49; Fladerer and Braun 2020: 325). The concept of individual authenticity was originally recognized by early Greek philosophers, who emphasized the importance of being true to one's self (Covelli and Mason 2017: 1). The AL theory postulates that more authentic leaders draw on their life experiences, psychological capabilities (e.g. optimism, hope, self-efficacy and resilience), a thorough moral standpoint and a supporting organizational climate to produce better self-awareness and self-regulated positive behaviours (Walumbwa *et al.* 2008: 90). This in turn fosters their own and their disciples' authenticity and development, bringing about happiness and sincere, continued performance. The authentic individual has a sense of responsibility and ownership concerning his or her own thoughts, values, beliefs and emotions, and acts in harmony with them. Authentic leaders are assumed to exert influence over subordinates, mostly through positive role modelling (Vannieuwenhuyzen 2016: 5). The more authentic leaders are seen to be, the more subordinates identify with them and feel psychologically invested; are more engaged in their roles and exhibit more citizenship-rated behaviours (Avolio and Gardner 2005: 315; Walumbwa *et al.* 2014: 89). Enacting these behaviours, authentic leaders enable higher quality interactions, leading to the active engagement of subordinates in workplace events, which results in better job satisfaction and higher productivity and performance (Malila *et al.* 2018: 130).

Authentic leaders do not have permanent styles, skills or traits. Rather, each have their unique style, which includes various behaviours and skills that fit the precise circumstance of the situation, based upon their specific life experiences (Hystada *et al.* 2013: 43). The theoretical frameworks of AL have four fundamental components, namely: self-awareness, internalized moral perspective, relational transparency and balanced decision-making. Authentic leaders communicate their “authentic” selves by stimulating these four crucial behaviours. Despite these four behaviours being distinct, they are related components of the AL framework (Walumbwa *et al.* 2008: 94; Vannieuwenhuyzen 2016: 6):

- i. *Self-awareness* means the authentic leader self-mirrors regularly and is conscious his or her strengths, weaknesses, values and beliefs. This kind of leader pursues regular feedback to improve (Avolio and Gardner 2005: 315). Northouse (2016: 203) states that when leaders have an unequivocal sense of who they are and what they embody, they have a strong base for their actions and decisions.
- ii. *Internalized moral perspective* refers to a strong moral basis and acting in accordance with one’s values, even under stress (Fladerer and Braun 2020: 327). This constitutes a self-regulatory process because every individual has control over the extent to which they allow others to sway them (Northouse 2016: 203). Leaders who are authentic do not pursue leadership roles for honour, status or personal reward. Rather, they lead from principle (Vannieuwenhuyzen 2016: 8).
- iii. *Relational transparency* refers to the aptitude to associate with others easily and the open sharing of feelings, thoughts and beliefs (Elkholy *et al.* 2020: 137). There is no secret agenda. Authentic leaders are able to develop relations by being themselves and “walk the talk” (Fladerer and Braun 2020: 327). This is leading with the heart, most likely resulting in followership of engaged employees (Raso 2019: 20).
- iv. *Balanced decision-making* is when the leader impartially pursues and listens to all stakeholders’ viewpoints. Conflict resolution and decision-making are handled in a rational manner, without emotional stakes getting in the way. The authentic leader also shows consistency in the

way they behave and theirs is no drama in the workplace (Alexander and Lopez 2018: 38; Bergstedt and Wei 2020: 48).

There are other factors influencing AL, namely positive psychological capacities, moral reasoning and critical life events. The four key positive psychological attributes that have an impact on AL are hope, self-efficacy/confidence, optimism and resilience, as shown in **Figure 3.1** below (Northouse 2016: 203). This theory has been applied in safety critical organisations such as the oil, gas and shipping industries in hazardous settings and results revealed the significance of leadership qualities, along with psychological factors, in influencing a positive workplace safety climate and reducing the risk of accidents (Hystada *et al.* 2013: 42; Borgersen *et al.* 2014: 394). The AL theory is therefore also relevant to radiographers who use hazardous radiation in executing their duties and who have to deal with rapidly changing technological and human challenges on a daily basis (Adams and Smith 2003: 198). According to Yelder (2006: 305), a changing world necessitates a novel paradigm of leadership. The AL Theory is now advocated as a pertinent conceptualization of mechanisms that may possibly explain how leaders indicate their commitment to safety in organizations that are safety-critical (Borgersen *et al.* 2014: 395).

With regard to radiation safety, authentic radiography leaders would be anticipated to put priority on the health and safety of radiographers and patients, as well as the organization as a whole, and reflect these priorities in their behaviours and statements. By means of role modelling and the social identification processes, authentic leaders may influence radiographers in their unique settings to adopt similar attitudes and behaviours (The Joint Commission 2017: 2). Hystada, Bartonea and Eid (2014: 42) suggest that processes of AL will also inspire more productive leader- follower exchanges. In radiography, this should lead to an improved focus on radiation safety through higher levels of mutual work ownership and engagement, and a stronger pledge to patient radiation protection. Regarding safety in the work environment, the enthusiasm of individual radiographers to engage in safe

behaviours include their knowledge about safety procedures and enthusiasm to abide by safety protocols and codes of practice. From this, it is reasonable to conclude that psychological capital, self-efficacy, hope, optimism and resilience could be an arbitrating variable in the relationship between leadership and radiation safety, serving to increase positive emotional states and attitudes that will nurture compliance and participation in radiation protection protocols (Neal and Griffin 2009: 15; Walumbwa *et al.* 2014: 90). In an establishment with a strong culture of safety, radiographers treat each other and their patients with respect and dignity. The organization is characterized by a workforce that is productive, learning, engaged and cooperative (The Joint Commission 2017: 2).

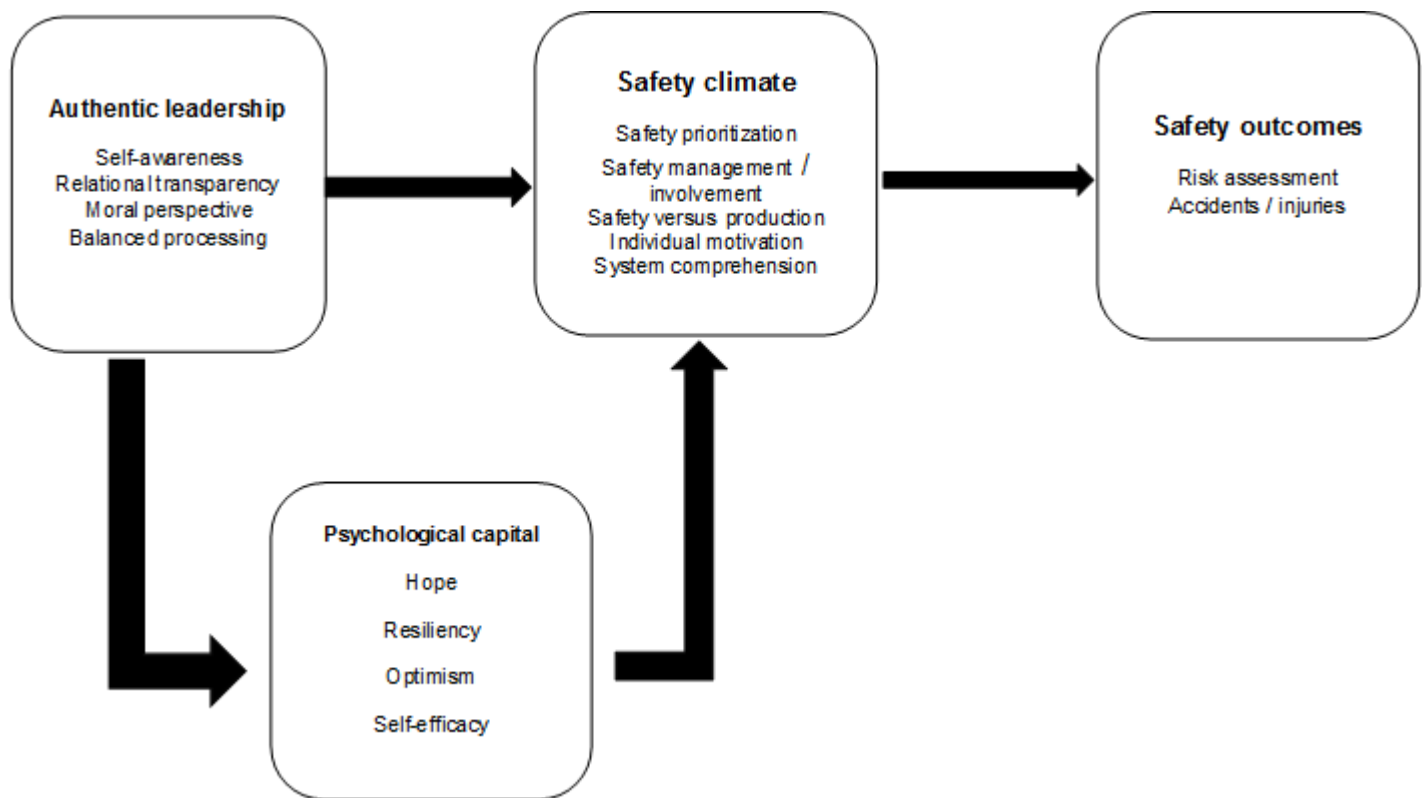


Figure 3.1: Theoretical framework showing relations between AL, psychological capital, safety climate and safety outcomes. Source: Hystada, Bartonea and Eid (2014: 42)

3.3.1 Authentic Leadership theory in healthcare

AL is fairly modern, mainly noted within the past 20 years in healthcare and management literature (Wong and Laschinger 2013: 947; Raso 2019: 20; Elkholy *et al.* 2020: 136). Healthcare organisations with modern challenges demand first-class leadership because challenges generate a need for the leader's transparency and value awareness, as well as the moral and ethical viewpoints of leadership. Authentic leadership could have a positive influence on radiology staff and the whole healthcare system, including safe patient care, and it may positively influence even society as a whole (Malila, Lunkka and Suhonen 2018: 137). There have been several empirical studies linking AL with work attitudes and outcomes, but very few in healthcare. A study by Alexander and Lopez (2018: 43) to comprehend the behaviours veteran nurse managers

use to create healthy work environments found that AL may provide a sound foundation to support leadership practices. Identified outcomes of AL are linked to staff engagement and organizational success, as well as being antecedent to high performance.

Alilyyani, Wong and Cummings (2018: 40) conducted a systematic review of healthcare outcomes, mainly in critical care settings. Associations with 43 outcomes were assembled into two main themes, i.e. healthcare worker outcomes and patient outcomes. Healthcare worker outcomes comprised five sub-themes, including individual psychological states, for example, optimism and trust; satisfaction with work, including work engagement; work environment factors, including structural empowerment and workplace behaviours; health and wellbeing; and performance. There was one patient outcome study associated with patient safety and there is evidence of AL positively affecting safety culture. Most studies on AL in healthcare were in nursing. However, other studied professional groups were physicians, surgeons, pharmacists, interns, dentists and administration staff. There is a dearth of literature on the impact of AL on radiographer safety behaviour. It is important for radiography managers to understand that a healthy work environment is vital to safeguard patient safety; improve radiographer staffing and retention; and maintain the financial sustainability of the healthcare institute.

3.3.2 Strengths and criticisms of Authentic Leadership

According to Northouse (2016: 207), AL fulfils the said need for trustworthy leadership in the world. In other words, AL helps address the gap and offers a solution to those individuals that are looking for sound leadership. Furthermore, this approach to leadership provides general guidelines for those who wish to become authentic leaders. Literature states that for one to be an authentic leader they should have self-awareness, an internalized moral perspective, relational transparency and balanced decision-making. Anyone can learn to be authentic and can cultivate authenticity. Like Servant and Transformational leadership, AL also has an obvious moral element. Basically, authentic leaders do what is

good and right for their society and followers. Lastly, unlike in Leader-Member Exchange (LMX), there is an objective measure of AL in the form of the AL questionnaire that is theoretically validated (Walumbwa *et al.* 2008: 89). Despite the strengths of AL, there are a number of criticisms noted in literature. Since it is still a new theory, it lacks a broad empirical base, bringing into question its validity. Furthermore, the moral element of AL is still vague. For example, AL suggests that leaders are driven by higher-order end ideals such as community and justice, but the way that these ideals function to influence AL is vague. Finally, despite AL being instinctively interesting on the surface, queries remain about whether this leadership style is truly effective in producing positive organisational outcomes (Northouse 2016: 208).

3.4 CHOICE OF THE THEORETICAL FRAMEWORK FOR THE STUDY

According to Adom *et al.* (2018: 438), there is no single perfect theory for a thesis. However, the adoption of one necessitates that the researcher has an in-depth understanding of the problem, purpose, significance and research questions of their study. The adopted theoretical framework must emphasize the purpose and importance of the study, according to Grant and Osanloo (2014: 18). To make a suitable choice of a theory, the scholar must ponder the guiding principles of the research and place the problem in relation to it. The research questions of the study and the purpose of the study must bring about evident features of the theoretical framework and must agree with the arguments promulgated by the theorists of the nominated theory (Adom *et al.* 2018: 439; Heale and Noble 2019: 36).

The aim of the study was to explore DBs involving radiographers, and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. In the literature review, the researcher noted a number of theoretical frameworks that can be used to study DBs, including:

- I. **Kanter's Theory of Structural Empowerment** – This theory postulates that empowerment is encouraged in work settings that offer employees access to support, information, resources and career progression opportunities (Kanter 1977). By making these surroundings available to workers, it has been found that there is improved commitment, trust, job satisfaction and a distinct reduction in work fatigue. Kantor's Theory has been shown to have a determinate effect on both worker empowerment and job satisfaction, as well as institutional optimism and success, particularly in healthcare settings (Kluska *et al.* 2004:1; Mota and Fisher 2015: 26; Gardner 2020: 13). Literature shows that the retention of healthcare workers improves when empowerment principles such as reduced work pressure, greater colleague interrelation, backing from leadership and staff sovereignty are set up (Belcourt *et al.*, 2020).
- II. **Conceptual Framework for Disruptive Behaviour** – this is a general DB model proposed by Walrath *et al.* (2010: 105) in a study with 91 registered nurses organised into 10 focus groups. This theory has four fundamental concepts to provide a framework for organizing and describing this intricate phenomenon: Antecedents, DBs, responses and consequences.
- III. **Ecological Occupational Health Model of Workplace Assault** – This is a victim-centric model proposed by Levin *et al.* (2003: 28). The theory proposes that the place of work, as well as the individual employee and the community, contribute to the chances of disruptive behaviour. In other words, workplace, worker and community dynamics are interconnected. Since injuries subsequent from violent acts can be both emotional and physical, this ecological theory considers both physical and verbal attacks.

While the above theoretical frameworks can be useful, this study intended to use the "best fitting" existing model as the theoretical framework. Since this study emphasizes the proactive role of leadership in mitigating DBs, the researcher sought a framework that takes this into account. Moreover, the two most common theoretical frameworks used in healthcare work settings for

addressing DBs from a leadership perspective are the LMX Theory and the AL Theory. This study suggests that AL can play a substantial role in creating healthy work environments for radiographers to implement radiation safety protocols. A brief description of the LMX theory and why it was not chosen is given below.

3.4.1 The Leader-Member Exchange Theory

The Leader–member Exchange theory is a relationship-based, bilateral theory of leadership (Scandura and Graen 1984; 428; Dulebohn *et al.* 2012: 1715). In contrast to behavioural leadership theories that emphasize what leaders do, such as transformational, servant, authentic or empowering leadership theories, LMX theory is rooted in the supposition that leaders inspire subordinates in their group through the quality of the interactions they cultivate with them. According to Northouse (2016: 137), before LMX theory, the general assumption was that leadership was something that leaders did to their subordinates. Liden and Maslyn (1998: 43) state that a high-grade relationship is branded by liking, trust, loyalty and professional admiration. In these interactions, leaders deliver support, coaching, developmental prospects, participation and input into organizational processes to the subordinate (Bernerth *et al.* 2016: 662). Providing such resources results in enthusiasm to give in return to the leader on the part of members by exhibiting behaviours such as loyalty, higher degrees of job involvement, greater responsibility and ownership for difficult jobs. To put it another way, feeling obligation and high levels of commitment to the supervisor are often thought of as the link between high LMX quality and pro-manager and sometimes pro-organizational behaviours (Erdogan and Bauer 2015: 641). Job attitudes are amongst the most commonly researched results of LMX quality and the literature shows that job satisfaction, organizational pledge and resignation intentions are steadily associated with LMX quality (Erdogan and Bauer 2015: 643).

3.4.2 Strengths and criticisms of the Leader-Member Exchange Theory

Northouse (2016: 145) recognises five strengths of LMX. To begin with, it is a robust expressive theory. The theory authenticates one's experience of how workers within organizations interact. Those who contribute more receive more and vice versa. Secondly, because it is the only leadership approach centred on the exchanges between leaders and followers, it stands out as unique. Other approaches emphasise followers, characteristics of the leader, situations or a combination of these. Thirdly, this theory draws attention to the significance of effective communication in leadership. Apparently, the high-quality exchanges in LMX are intimately tied to communication. Fourthly, the fundamental principle of LMX serves as a good prompt for leaders to be impartial and equivalent to their followers. Lastly, several studies have validated the theory in real practice.

While years of LMX research delivers evidence for the suggested benefits of high-quality exchanges between subordinates and leaders (Jian 2014: 54), most LMX inquiries do little to account for the potential influence of the environmental conditions facing the dyad (Bernerth *et al.* 2016: 662). This omission is substantial as an emergent body of knowledge reports counter-intuitive findings concerning personnel and their work relationships. For instance, a study by Harris *et al.* (2005: 363) reported that workers with high-quality relationships had greater resignation intentions than those with normal relationships, despite widespread belief that LMX negatively relates to employee turnover. Furthermore, leadership academics generally applaud the encouraging performance-related consequences of high-quality relationships but empirical research does not always support such claims, with some scholars finding no relationship and others finding negative relationships between LMX and performance (Bernerth *et al.* 2016: 662). Finally, Northouse (2016: 147) calls attention to a major flaw in that LMX is rather ambiguous and is missing details on how to nurture a leadership-making relationship, nor is there any training program for companies.

The abovementioned weakness of the LMX theory made the researcher choose AL. Despite the criticisms of AL, it is truly an intuitively interesting theory that is emerging in leadership globally. Therefore, the researcher aspired to be part of the scholars who contribute to the growth of the theory, especially in healthcare. The fact that this theoretical framework has been applied in hazardous work settings like the gas, oil and shipping industries with evidence of success (Hystada, Bartonea and Eid, 2013; Borgersen *et al.*, 2014) motivated the researcher to include radiographers by virtue of using radiation in their day-to-day-activities, making this theoretical framework appropriate. The radiography workplace, as indicated above, is potentially stressful as radiographers use harmful radiation, and also have to deal with multiple technological and human challenges on a daily basis. Therefore, psychological capital cannot be ignored. Radiography Managers therefore need to develop a leadership approach that considers the psychological capital of their subordinates to create a health work environment, free from DBs.

3.5 CHAPTER SUMMARY

Research in radiography has been done from a largely positivist point of view while the behavioural aspect has been overlooked. Literature however shows that the conduct of the RM can influence subordinates to ensure that high radiation safety outcomes in the department are achieved. The AL theory was therefore chosen to provide the lens through which this complex topic can be viewed and analysed. The succeeding chapter presents the research design and methods, which will be used to collect data that will allow an accurate description of DBs in the radiology department.

CHAPTER 4: RESEARCH METHODS

4.1 INTRODUCTION

Chapter Three discussed the theoretical framework underpinning this study, which gave insight into how RMs can influence patient safety outcomes by creating healthy work environments. This chapter will focus on the description and justification of the research design, paradigm and methods of data collection used in the study. Fundamentally, radiography combines medical and scientific knowledge, which are social products and as a result, must be studied by tools of social analysis (Squibb 2013: 124). The selection of the research design, the research paradigm, as well as the pros and cons of the research tools chosen will be explained first. This is followed by a discussion on their ability to address the research aim and objectives set by this dissertation. The chapter further discusses the sample size and the sampling strategy employed by the researcher, as well as the data analysis methods which have been applied. It concludes with a discussion on the ethical considerations and a summary of the chapter.

4.2 RESEARCH DESIGN

Creswell (2009: 22) defines research designs as strategies and processes for studies that encompass the decisions from general assumptions to complete techniques of data collection and analysis. In other words, when describing the research design, the researcher specifies the *how*, the *when* and the *where* of the way data was gathered and analysed in the investigation (Maxine and Peter 2014: 74). The choice of the research design should be informed by the researcher's philosophical assumptions, plans and specific methods of data collection, analysis and interpretation. Furthermore, the selection of a research design is founded on the kind of research problem or issue being studied, the scholar's personal experiences and the audiences for the study. In a nutshell, numerous scholars describe the process of designing research as unique to the

problem being studied, rather than adopting regular textbook designs as is (Denscombe 2010: 3; Pandey and Pandey 2015: 22; Bhat 2020: 1; Trochim 2020: 1). Previous studies have used either quantitative (Institute for Safe Medication Practice 2014: 1; Rehder *et al.* 2020: 19) or qualitative (Walrath *et al.* 2010: 105; Cai *et al.* 2011: 312) approaches to study DBs in healthcare.

A mixed-methods approach was selected for the current study. The mixed research approach ‘focuses on collecting, analysing and mixing both quantitative and qualitative data in a single study’ (Teddie and Tashakkori 2009: 14). There are a number of reasons that mixed methods was selected for this study. Firstly, the rationale for the quantitative data collection and analysis was necessitated by the paucity of literature on DBs in radiography and low resource settings in particular. Many authors argue that when addressing DBs, it is crucial to gain an understanding of the prevalence, antecedents and consequences of these behaviours in the healthcare setting concerned (Walrath *et al.* 2010: 105; ICN 2017: 1; Sisawo *et al.* 2017: 1). This permits the formulation of tailor-made interventions that take into account the setting’s unique characteristics (Berman-Kishony and Shvarts 2015: 1; Vukmir 2016: 60; Rehder 2020: 1). The quantitative strand therefore allowed the researcher to address this gap.

On the other hand, the justification of the qualitative strand was to explore RMs’ experiences, opinions, beliefs, feelings and judgments of DBs in their respective departments. The perspectives of the managers were also vital in this quest to formulate a mitigatory framework that focusses on leadership. Moreover, DB is complex and can manifest in many different forms. Hence, both quantitative and qualitative data had to be merged to provide the range plus depth of data necessary to answer the research questions and to enhance rigour through methodological triangulation (Teddie and Tashakkori 2009: 32; Creswell and Plano-Clark 2018: 53). Lastly, a number of researchers have recognized that the mixed methods approach can be particularly powerful when addressing intricate issues such as public health services interventions like

patient safety, as in this case (Sale *et al.* 2002: 46; Fetters *et al.* 2013: 2134; Tariq and Woodman 2013: 3; Kaur 2016: 97; Vedel *et al.* 2018: 365).

However, using the mixed method research approach poses three main challenges. To begin with, Denscombe (2014: 161) avers that the mixed methods approach requires more effort, money and time as it includes at least two strands or phases of investigation. Secondly, if outcomes from the different methods do not confirm to one another, the investigator may need to extend the study to unravel the reasons for this. Thirdly, it needs the investigator to expand his/her research skills, aptitudes and experiences by learning about new research methods and techniques in order to be competent to carry out both the quantitative and qualitative strands of the study (Maarouf 2019: 3). However, Molina-Azorin (2016: 38) believes that the latter aspect must not be considered a shortcoming, but rather as an opportunity.

During the process of designing this mixed methods study, three key issues were well thought-out: timing (sequencing), priority and integration (level of interaction) (Creswell and Plano-Clark 2018: 108).

Timing

Timing determines whether the quantitative or qualitative data collection and analysis occur concurrently, in parallel or in sequence (Schoonenboom 2019: 113). In the present study, both the quantitative and qualitative strands were done concurrently, i.e. a convergent parallel approach. This approach presented an effective design as both kinds of data were gathered approximately all at once, ensuring that the study population remained accessible (Doyle *et al.* 2016: 626).

Priority

Schoonenboom (2019: 114) postulates that Priority denotes which method (quantitative or qualitative) is given more weight in the study. Both types of data were equally (QUAN + QUAL) needed in order to develop a more

comprehensive understanding of DBs in low resource setting radiography as there are few studies that have explored this phenomenon in the literature. Furthermore, each strand in this study addressed different but related objectives, hence the equal priority given. The benefit of giving equal priority in this instance was that the data produced by quantitative and qualitative strands was different but complementary (Denscombe 2014: 148; Liamputtong 2019: 701).

Integration

Integration refers to the phase in the research process where quantitative and qualitative data are merged (Creswell and Plano-Clark 2018: 108). In the current study, a parallel-databases variant of convergent mixed methods was employed. The two parallel strands were carried out individually and were only combined during the interpretation stage of the study (Creswell and Plano-Clark 2018: 742; Walker and Baxter 2019: 3). This approach allowed the researcher to link the themes regarding how RMs can design solutions to mitigate DBs with how radiographers experience and deal with these behaviours at central hospitals in HMP.

In summary, for the researcher to attain an in-depth understanding of DBs involving radiographers in HMP, this study employed a mixed methods convergent parallel-databases approach. This approach entails gathering both quantitative and qualitative data simultaneously; analysing both datasets separately; comparing the results from the analysis of both datasets; and interpretation as to whether the results support or challenge each other as shown in **Figure 4.1** below (Creswell and Plano Clark 2018: 127; Creswell and Creswell 2018: 217).

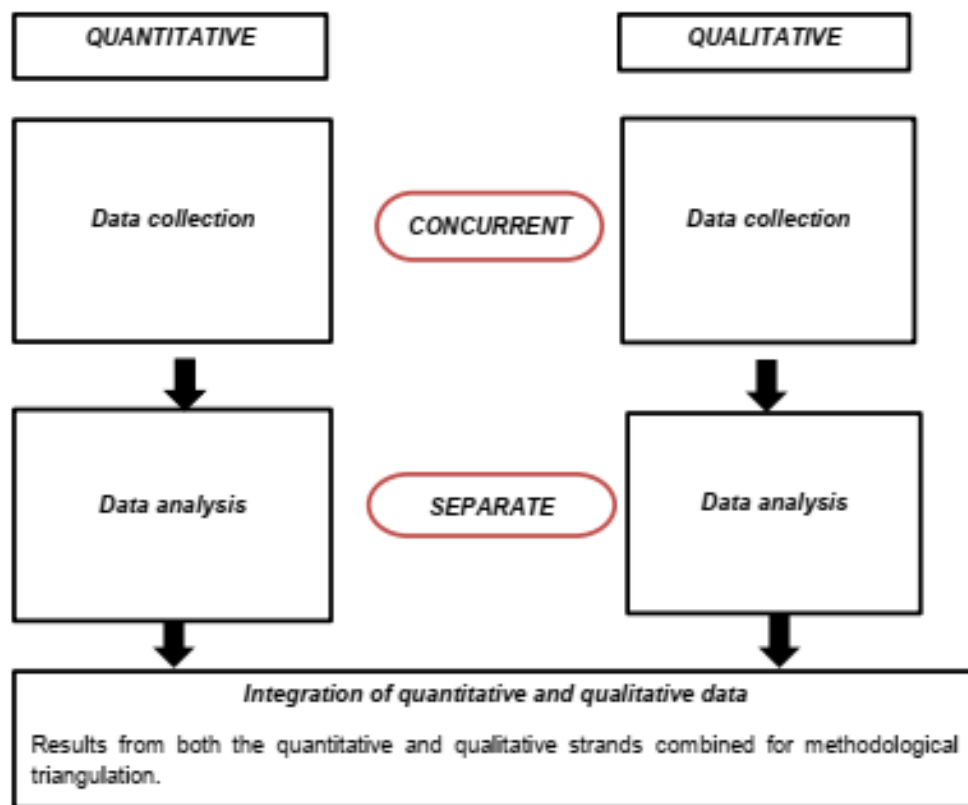


Figure 4.1: Diagram of the convergent parallel design

Source: Subedi (2016: 572)

4.3 RESEARCH PARADIGM

A mature science is buttressed by a single paradigm, which directs the standards for genuine work within the science it governs (Chalmers 2013: 101). The term paradigm was first coined by American philosopher Thomas Kuhn to refer to a philosophical way of thinking (Kuhn 1962: 10). The name originated from Greek where it means “pattern”. In academic inquiries, the word paradigm is used to define a scholar’s ‘worldview’ (Maxine and Peter 2014: 28; Creswell and Plano-Clark 2018: 85; Kaushik and Walsh 2019: 1). This worldview is the viewpoint, or school of thought, or fundamental set of principles, or set of shared beliefs that guides the interpretation or meaning of study data (Guba and Lincoln 1994: 105; Kivunja *et al.* 2017: 26). In other words, a research paradigm essentially mirrors the scholar’s principles about the world that s/he exists in and desires to exist in. It constitutes the intellectual beliefs and principles that

shape how a scholar views the world, as well as how s/he understands and acts inside that world. According to Kivunja *et al.* (2017: 26), paradigms are therefore imperative because they make available beliefs and orders, which for researchers in a specific field, guide what should be studied; how it should be investigated; and how the results of the study should be understood. Since the paradigm describes a scholar's philosophical alignment this has substantial consequences for every judgement made in the research process, including the choice of research methods (Moon and Blackman 2014: 1167). Although there are numerous paradigms that structure and organize modern healthcare research, they are all essentially philosophical in nature and encompass the following common elements: epistemology, ontology, methodology and axiology (Guba and Lincoln 1994: 110; Kaushik and Walsh 2019: 1), the meanings of which are discussed below.

Epistemology, or the study of knowledge, originates from Greek where the term *episteme* refers to knowledge (Levers 2013: 2). In academic enquiry, epistemology is used to define how one gains knowledge of what one knows. It stresses the nature of human knowledge and comprehension that researchers can possibly obtain in order to be able to extend, widen and develop the frontiers of knowledge in their fields (Kivunja *et al.* 2017: 27; Creswell and Plano-Clark 2018: 88). Epistemology is essential because it supports to institute the faith put into data. In this study, in order to address research questions effectively, one needs to collect data by “what works”, in this case combining both quantitative and qualitative data. The rationale of the quantitative strand was to assess the extent of the problem of DBs involving radiographers in HMP, while the logic of the qualitative strand was to explore the opinions of RMs with regard to the mitigation of these behaviours. This is in line with advice given by Walrath *et al.* (2010: 105), who argue that when developing strategies to mitigate DBs, it is also important to examine and document the extent of the problem of the said behaviours in the healthcare organizations concerned.

Ontology refers to the assumptions that scholars make in order to be certain that something is real or makes sense, or the very essence or nature of the

social incidence they are examining (Creswell and Plano-Clark 2018: 88). Crotty (1998: 18) states that Ontology scrutinises one's fundamental belief system as a researcher about the nature of being and existence. It aids one to conceptualise the nature and form of reality, and what one believes can be known about that reality. Philosophical assumptions about the nature of reality are vital to understanding how one makes sense of the data one collects. These assumptions, propositions or ideals help to focus one's thinking about the research problem, its importance and how one might approach it in order to contribute to its resolution (Kivunja *et al.* 2017: 26). Due to the intricate nature of DBs, there was a need to gather both quantitative data from radiographers and qualitative data from managers. It therefore follows that the nature of reality was that there are multiple realities, which the researcher needed to tap into for him to gain a deeper and complete understanding.

Methodology refers to the design of the research, methods, procedures and techniques used in a study that is well pre-arranged to examine something. It is the process of conducting research (Creswell and Plano-Clark 2018: 88). Overall, the methodology articulates the reason and course of the systematic processes followed in carrying out a study in order to advance knowledge about a research problem. It comprises the assumptions made, limitations faced and how they were minimised or mitigated (Kivunja *et al.* 2017: 28). According to Crotty (1998: 15), not only does the description of the methodology employed matter, but is also an explanation of the basis for the choice and the particular forms in which the methods are adopted. Accordingly, in this study as alluded to above, a convergent parallel mixed method approach was employed to allow the researcher to capture and explore the complex nature of DBs involving radiographers. This choice of methodology is consistent with the study's philosophical assumptions, i.e. pragmatism.

Axiology refers to the role of ethical concerns that must be considered when planning a study. It includes outlining, assessing and understanding concepts of wrong and right behaviour concerning the study. Axiology ponders on what value to attribute to the different facets of an inquiry, the respondents, the data

and the listeners to which one shall report the results of one's study (Kivunja *et al.* 2017: 28).

According to Creswell and Clark (2018: 90), many scholars accept pragmatism as the ideal paradigm for mixed methods inquiries. Pragmatism is embraced to be "the philosophical partner" of mixed methods research as its fundamental assumptions deliver the crux for mixing research methods (Maarouf 2019: 5). Johnson *et al.* (2007: 112) echo this sentiment by stating that pragmatism provides the epistemology and the reason for combining both the qualitative and quantitative research methods. This paradigm draws on many notions, including using "what works," using diverse methods and appreciating both objective and subjective information (Tashakkori and Teddlie 2003: 5). It is all about the view of "what works", mainly referring to the pragmatic theory of truth. Pragmatism therefore leads to "action-oriented" research techniques (Maarouf 2019: 5). This paradigm was selected to underpin the study because of flexibility, as it allows both quantitative and qualitative research methods to be combined in a single study, abandoning the forced-choice dichotomy between post-positivism and constructivism. Indeed, paradigms are not "watertight compartments" (Crotty 1998: 9) and can be crossed if determined suitable by the emerging data and research question (Morrow 2007: 214). Since this study involves the use of semi-structured questionnaires and in-depth interviews respectively, and mixing them, the philosophical approach is apparently pragmatic. The researcher's choice of the paradigm was based on the consideration of four components as described above, i.e. ontology, epistemology, axiology and methodology (Creswell and Clark, 2018: 88). **Table 4.1** below illustrates the relationships between the term's states and the method that guided this study design.

Many researchers have, however, generally criticized pragmatism as a philosophy and also as a philosophical justification for the mixed research approach (Maarouf 2019). Sale *et al.* (2002: 49) contend that pragmatism does not address the issue of the divergent assumptions of the qualitative and quantitative paradigms. They consider that these assumptions suggest that

quantitative and qualitative methods are not studying the same phenomenon, which makes mixing methods for triangulation unscientific. In addition, Biddle and Schafft (2015: 320) have criticized pragmatism from an axiological perspective, claiming that pragmatists overlook the role of ethics in research. They argue that defining pragmatism as "what works" raises the question of "what works for whom and to what extent?" Lastly, Denscombe (2014: 161) believes that pragmatism is open to misunderstanding. There is a simplistic use of the word 'pragmatic', which suggests convenience and a lack of values underlying a course of action. There is the risk that mixed methods research will then be linked with this understanding of the word and thus becomes considered as a method in which 'anything goes'.

Table 4.1: Philosophical assumptions of the study

Ontology	Epistemology	Theoretical perspective	Methodology	Methods	Sources
There is a gap in literature about DBs in low resource setting radiography and no policy or procedure on mitigating DBs in the radiography labour force.	Reviews other studies done on the impact of DBs in low resource setting healthcare. Analyses the results from the data collected from participants. Creates a model with the results.	Other studies were examined that were done on forms and causes of DBs.	A Convergent parallel mixed methods study will be undertaken.	Quantitative (Strand 1) data will be collected from radiographers via surveys. Qualitative (Strand 2): radiography managers will be selected for an in-depth interview to explore DB interventions. The data from both phases will then be integrated.	The answers from the questions asked in the survey and interviews.

4.4 STUDY SETTING

A research setting is an environment in which research is carried out and where data is collected (Roberts and Priest 2010: 48). The selected study province is the Harare Metropolitan Province in North Eastern Zimbabwe. The province consists of Harare, the country's capital and most populated city, and two other municipalities, Epworth and Chitungwiza. It comprises three districts, namely South Western, Ruwa-Epworth and Chitungwiza, as shown in **Figure 4.2** below. The area of HMP is 872 square kilometres, which is equivalent to 23% of the entire span of Zimbabwe. According to the 2012 census, the jurisdiction has a total population of 2,123,132, of whom approximately 1,606,000 live in Harare proper; 365,025 in Chitungwiza; and the remaining 152,115 in Epworth. As of the latest census, 6.25% of Zimbabwe's population live in HMP, making it Zimbabwe's most populated province (Cole *et al.* 2011: 4; Zimstat, 2013: 110). There are three central hospitals in the province, namely Parirenyatwa Group of Hospitals (PGH), Harare Central Hospital (HCH) and Chitungwiza Central Hospital (CCH), all with 5 radiography departments and a total staff complement of 141 members. Parirenyatwa consists of three radiography departments, namely Parirenyatwa hospital radiology (PH), Parirenyatwa radiotherapy centre department (PRC) and Parirenyatwa Nuclear Medicine/School of Radiography (PNM-SOR) department. The five central hospital radiography departments served as the study centres.

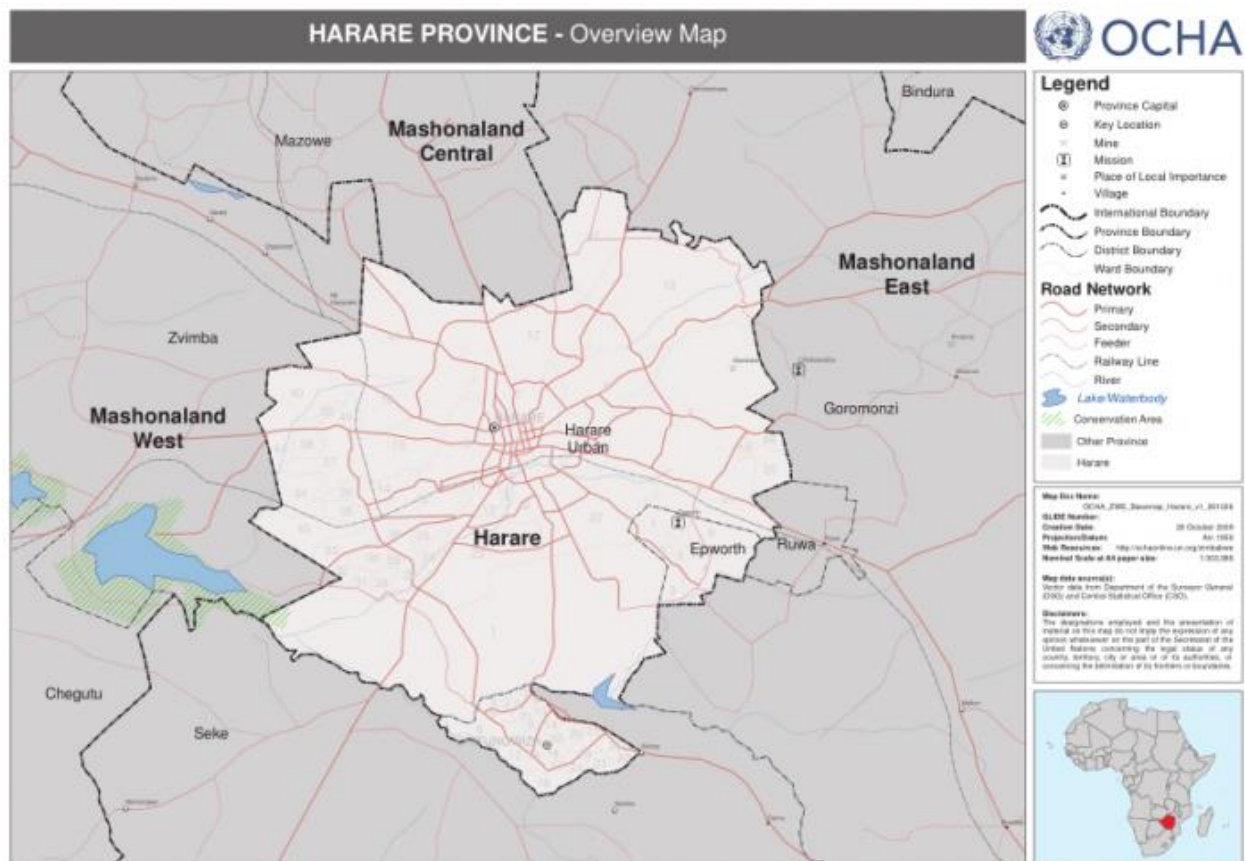


Figure 4.2: Map of the Harare province. Source: UN-OCHA (United Nations Office for the Coordination of Humanitarian Affairs, 2009)

4.5 RESEARCH POPULATION

A research population can be defined as the entirety of all subjects that complies with a set of criteria, covering the entire group of people that is of interest to the investigator and to whom the research results can be generalised (Maxine and Peter 2014: 18). The research population for this study comprised all radiographers working in the five radiology departments at the three central hospitals in HMP. There is a total of 141 radiographers working in the three central hospitals in HMP, according to the Allied Health Practitioners Council of Zimbabwe (AHPCZ) 2019 register. They are from diagnostic, ultrasound, nuclear medicine

(NM)/School of Radiography (SOR) and therapy departments, distributed as shown in **Tables 4.2, 4.3** and **4.4** below. However, due to the harsh economic climate, there was a massive exodus of radiographers in search of greener pastures in the diaspora, significantly depleting the population.

Table 4.2: Radiographers at the three central hospitals in HMP

Population	Hospital A (PGH)	Hospital B (HCH)	Hospital C (CCH)	Total
Diagnostic Radiography Managers	3	2	2	7
Therapy radiography Managers.	3	-	-	3
Therapy Radiographers	25	-	-	25
Diagnostic radiographers	30	25	18	73
Nuclear Medicine/SOR Manager	2	-	-	2
Nuclear Medicine/SOR Radiographers	4	-	-	4
Ultrasound Managers	2	2	1	5
Sonographers	9	8	5	22
Total	78	37	26	141

Table 4.3: Total number of radiographers grouped according to their respective departments in the three hospitals in HMP

Radiography department	Hospital A (PH)	Hospital A (PRC)	Hospital A (PNM/SOR)	Hospital B (HCH)	Hospital C (CCH)	Total
Diagnostic	44	-	-	37	26	107
Therapy	-	28	-	-	-	28
Nuclear Medicine/SOR	-	-	6	-	-	6
Total	44	28	6	37	26	141

Table 4.4: Total number of RMs grouped according to their departments

Radiography department managers	Hospital A (PH)	Hospital A (PRC)	Hospital A (PNM/SOR)	Hospital B (SMCH)	Hospital C (CCH)	Total
Diagnostic	6	-	-	6	4	16
Therapy	-	6	-	-	-	6
Nuclear Medicine/SOR	-	-	2	-	-	2
Total	6	6	2	6	4	24

4.6 SAMPLING OF HOSPITALS

Sampling refers to the decisions that the researcher makes in relation to from where and from whom they will gather the data needed to answer the research questions (Ravitch and Carl 2016: 157). Sampling of the three hospitals in HMP in this study was achieved by criterion purposive sampling. In this case, the criteria for selection being a referral hospital in the public sector. This method of sampling

was chosen because the aim of the study was to address DBs in the public sector. Public sector hospitals appear particularly susceptible to incidents of DBs due to increased levels of over-crowding; long waiting times plus staff shortages; unavailability of beds and resources; fewer resources for training and human resources improvement; and budget cuts and old or insufficient equipment, amongst other factors (Chappell and Di Martino 2006: 14; Sherrill 2016: 10). In addition, selecting the central hospitals ensured that the entire province was adequately characterised as all three districts, namely South Western, Ruwa-Epworth and Chitungwiza, were represented. It also guaranteed that the various social, cultural, economic and demographic characteristics of the entire province were captured. The central hospitals are the biggest and serve the entire province, taking referrals from all other smaller healthcare facilities within. Each hospital has Diagnostic Ultrasonography, while the Parirenyatwa group has Nuclear Medicine/SOR and Therapy departments in addition.

4.7 QUANTITATIVE METHODOLOGY

A descriptive cross-sectional survey was used to collect the quantitative data in this study. This approach was chosen because of the need to document the views of as many radiographers as possible about the prevalence, causes and consequences of DBs in their workplaces (Drummond and Murphey-Reyes 2017: 171). By documenting the views of many radiographers, the generalizability of the study was enhanced (Queirós *et al.* 2017: 370). In addition, the quantitative approach using questionnaires has been frequently adopted by many studies investigating DBs in literature (Institute for Safe Medication Practice 2014; Hattingh *et al.* 2019: 19; Layne *et al.* 2019: 155; Rehder *et al.* 2020: 19). The purpose of this strand was to address the first two objectives of the study, namely (a) to determine the DBs involving radiographers that impede a safe work environment for radiographers at central hospitals in HMP and (b) to determine the causes of DBs involving radiographers employed by central hospitals in HMP.

4.7.1 Sampling

After the radiographers were identified with the help of Human Resources in each central hospital in HMP, a simple random sampling technique was used to select radiographers who fulfilled the inclusion criteria (Teddie and Tashakkori 2009: 165; Kaur 2016: 93). This sampling technique was the best method to guarantee that the sample was reflective of the population from which it was drawn, thereby abating sampling bias (Creswell and Plano Clark 2018: 314). With the assistance of a bio-statistician, a minimum sample as well as the minimum sample + 10% size for the study was determined as outlined in **Tables 4.5 and 4.6**.

Table 4.5: Minimum sample

Radiography department	Hospital A (PH)	Hospital B (SMCH)	Hospital C (CCH)	Total
Diagnostic	29	24	17	70
Therapy	17	0	0	17
Nuclear Medicine/SOR	3	0	0	3
Total	49	24	17	90

Table 4.6: Minimum + 10%

Radiography department	Hospital A (PH)	Hospital B (SMCH)	Hospital C (CCH)	Total
Diagnostic	32	26	19	78
Therapy	19	0	0	19
Nuclear Medicine/SOR	3	0	0	3
Total	55	26	19	100

4.7.2 Inclusion criteria

- Radiographers, both male and female above 21 years old, working at central hospitals in HMP;
- Radiographers with at least a diploma in Radiography (Diagnostic or Therapy);
- Radiographers who had at least one-year of work experience in the relevant department;
- Radiographers registered with the Allied Health Practitioners of Zimbabwe; and
- Radiographers who consented to the terms and conditions of the study.

4.7.3 Exclusion criteria

- Radiographers who are not working at central hospitals in HMP;
- Radiographers with less than one-year of work experience;
- Radiographers not registered with the Allied Health Practitioners Council of Zimbabwe; and
- Radiography students and interns.

4.7.4 Data collection process and instrumentation

Data collection is the process of gathering evidence from significant sources that could answer the research problem and assess the outcomes (Terrell 2016: 45). Before commencing the study, the researcher obtained ethics clearance from the DUT's Institutional Research Committee (IREC 097/20) (Appendix 1), as well as gatekeeper permission. Participants were then given a Letter of Information (Appendix 10) about the study and those that agreed to take part in the study were requested to sign a Letter of Consent (Appendix 11). A self-administered questionnaire (Appendix 12) containing both closed and open-ended questions was used to collect statistical data from radiographers that satisfied the inclusion criteria. A questionnaire was chosen as a suitable method for data collection in accordance with literature, as most studies assessing DBs employed this

technique (Institute for Safe Medication Practice 2014: 1; Layne *et al.* 2019: 155; Rehder *et al.* 2020: 19). The questionnaire was adapted from the DB scale by Rehder *et al.* (2020: 2); the ISMP Survey on Disrespectful Behaviour in Healthcare; as well as studies by Hattingh *et al.* (2019: 19) and Berman-Kishony and Shvarts (2015: 10). The DBs scale by Rehder *et al.* (2020: 2) is simple and shows strong psychometric properties, and distinguishes a culture of DBs amongst work settings. Aspects of the AL theory were also used to inform the questionnaire development.

Converse and Presser (1987: 9) recommend that investigators consult published compilations of study questions, like those used in the ISMP Survey on Disrespectful Behaviour in Healthcare. In their opinion, this gives the researcher not only ideas on how to develop their questionnaire, but they can replicate questions from surveys that are applicable to their own studies. Since these questions and questionnaires have already been confirmed and used successfully, it saves both time and effort. However, as no pre-existing DBs questionnaire specific to radiographers was identified, some questions that were relevant to the study had to be developed. The supervisors and colleagues at the Harare School of Radiography were also consulted in question development to establish how to phrase each question and appraise participants' "understanding of the questions" meaning. The questions were also written taking into consideration the Bradburn *et al.* (2004: 8) recommendations that unlike witnesses in court, questionnaire respondents are under no obligation to answer the questions. They must be persuaded to take part in the survey and their interest must be sustained throughout. The questionnaire addressed some of the research questions by providing a demographic outline of the radiographers and revealing the causes, frequency and consequences of DBs in their workplaces. The demographic and background questions were posed first, followed by an evaluation of DBs in their respective departments, the mechanisms for coping and the consequences of DBs.

The questionnaire was established to elicit information on:

- Demographics (age, gender, marital status, academic qualifications, work experience, number of co-workers and current employment);
- Prevalence of DBs;
- Type of DBs radiographers are exposed to;
- Perpetrators of the DBs;
- Causes of the behaviours;
- Reporting of DBs; and
- Impact of DBs on the radiation safety of patients.

The questionnaire contained a total of 15 items in order to obtain maximum data for minimum burden on radiographers. According to Denscombe (2014: 169), a decent questionnaire design “should reduce the response burden in order to bolster the prospects of a good response rate”. The questionnaire consisted of a mixture of closed and open-ended questions. The combination of both open and closed-ended questions was the best approach to avoid an excessively restrictive questionnaire (leading to incomplete data) and one that is overly open and difficult to analyse (Rattray and Jones 2007: 235) . Four questions were open-ended, while the other questions had multiple responses, including “Yes/No” responses. Items 13 (causes of DBs) and 15 (consequences of DBs) consisted of Likert-scale type questions with “Strongly Agree” to “Strongly Disagree” responses. This type of scale was chosen because it undertakes that the strength of experience is linear and makes the supposition that attitudes can be measured (Rattray and Jones 2007: 236), in this case radiographers’ attitudes. Closed-ended questions were employed to determine descriptive information because they are faster and easier to answer. Furthermore, closed-ended questions are easily pre-coded and consequent basic statistical analyses are straightforward (Hyman and Sierra 2016: 2). The open-ended questions, on the other hand, offered respondents a chance to provide a wide range of responses. For example in this particular instance, the

numerous actions taken against disruptive healthcare workers, which aided triangulation and added depth to the questionnaire (Polit and Beck, 2014).

Each participant was asked to choose a place and time where he/she was comfortable to complete the questionnaire, after which they were given 10 minutes to read the Letter of Information and ask questions if necessary. The participants were then allowed an average of 20 minutes to complete the questionnaire. The data collection for radiographers took place between 2pm and 8pm so that those on day duty and those on call duty were accommodated. Participants were requested to participate voluntarily in the study and told that they could withdraw at any time during the study if they so wished, without any penalty. Additionally, the researcher informed participants that their names were anonymous and that the information gathered from them would not be divulged. In so doing, the researcher used pseudonyms and the information collected was known only to the researcher.

4.7.5 Pilot study

A pilot study, sometimes named a feasibility study, is a test run done in preparation for the comprehensive inquiry. It can also be used in specific pre-testing of research instruments, including questionnaires (Polit and Beck 2014: 196; Terrell 2016: 41). In the current study, the pilot study was carried out to test the questionnaire in order to refine it. The questionnaire was administered to ten radiographers (two from each department) randomly selected from each of the five (10% of the total sample) radiology departments in the three central hospitals in HMP. Connelly (2008: 411) recommends that a pilot study sample should be at least 10% of the sample planned for the larger parent study. The radiographers involved in the pilot study were not part of the main study (Teddie and Tashakkori 2009: 178). Although a larger pilot sample would have been preferred, the pool of potential respondents was small and risked becoming even smaller with each new respondent in the pilot. Each participant was asked to choose a place and time

where he/she was comfortable to complete the questionnaire, after which they were given 10 minutes to read the letter of information and ask questions if necessary. The participants were then allowed an average of 20 minutes to complete the questionnaire. While completing the questionnaire, they were asked their thoughts. Each time they read and responded to a question, they were asked to describe exactly what came into their minds. The participants were observed as they completed the survey. Sections or places where they paused or made errors were noted. The information gathered from the exercise was used to modify and perfect the instrument. The adjusted questionnaire was then reviewed by two lecturers in the School of Radiography for face validity, clarity and sensitivity of items.

4.7.6 Data analysis

For quantitative data analysis, the researcher began by changing the raw data into a form useful for data analysis. The data were scored by allocating numeric values to each response, cleaning data entry mistakes from the database and generating the special variables that were required. Descriptive statistics including standard deviations and means were calculated. Frequencies were represented in the form of tables, pie charts and graphs. To test for significant trends in the data, inferential statistics were applied. A p -value of 0.05 was used throughout to indicate the significance level at 95%. The analysis was carried out using the latest version of the Statistical Package for the Social Sciences (SPSS) (version 27.0), which is a software package that allows questionnaire data to be manipulated in various ways for statistical analysis. The statistical tests that were employed include:

- **Chi-square goodness-of-fit-test:** This is a univariate test used on a categorical variable to check whether any of the response choices are selected significantly more or less often than the others. Under the null hypothesis, it is presumed that all responses are equally chosen.

- **Chi-square test of independence:** Used on cross-tabulations to assess if there is a significant relationship between the two variables represented in the cross-tabulation. When conditions are not met, Fisher's exact test is used.
- **Binomial test:** Checks whether a significant section of participants select one of a possible two choices. This can be extended when data with more than two response options is split into two distinct groups.
- **Prevalence odds ratio:** The test denotes the chances that a consequence will happen given a specific exposure, relative to the odds of the consequence occurring in the absence of that specific exposure.

The open-ended questions eliciting information on the numerous actions taken against disruptive persons were unsuitable for analysis using SPSS. The responses were therefore analysed using thematic analysis with data coding assisted using QSR NVivo 11.

4.8 RELIABILITY AND VALIDITY

Concern must not only be given to the results of the research but also to the rigour of the study. Heale and Twycross (2015: 66) state that Rigour refers to the extent to which the scholar worked to advance the quality of the study. In quantitative studies, this is achieved through the measurement of the validity and reliability of the survey instruments. Measurement of these two qualities minimizes mistakes that might arise from measurement problems in the study. This section describes the processes and steps that were adopted to ensure the rigour of the questionnaire used in this study.

4.8.1 Reliability

Reliability is defined as the fidelity with which a questionnaire measures the intended phenomenon (Heale and Twycross 2015: 66) . The less difference a questionnaire produces in repeated measurements, the greater its reliability. Reliability can therefore be likened to a measure of stability, consistency or dependability (Polit and Beck 2014: 416). The test-retest or stability of the questionnaire in this study was achieved through piloting it. The test-retest reliability will show if similar results are attained by repeatedly administering the same survey to similar respondents. The results obtained from the actual study were compared and correlated with initial pilot study results in order to obtain a reliability coefficient. The split-half technique was used to compute a correlation coefficient.

4.8.2 Validity

Validity refers to the extent to which a questionnaire measures what it is supposed to measure (Polit and Beck 2014: 423). In the current study, the content, criterion-related and construct validity of the questionnaire were established. Content validity relates to the degree to which the questionnaire fully measures the concept of interest (Bolarinwa 2016: 197). In this study, it was established by using a panel of lecturers at the school of radiography to evaluate the questionnaire. In addition, reference to literature was made to ensure that all aspects about DBs were included in the questionnaire. This was in line with the recommendations of Heale and Twycross (2015: 66) who propose that, in order to guarantee content validity, the questions for a survey instrument should be generated from numerous sources that include experts and relevant literature. Criterion-related validity measures how well the questionnaire findings compare against another instrument (Bolarinwa 2016: 197). For this purpose, the questionnaire for the current study was compared on the consistency of the results with existing instruments measuring the same concept, i.e. DBs in healthcare. According to Bolarinwa

(2016: 197), Construct validity is a measure of how meaningful the questionnaire is when it is in practical use. To establish construct validity, a factor analysis of the 5-point Likert type questions was done both after the pilot and the main study.

4.9 QUALITATIVE METHODOLOGY

An exploratory qualitative study using in-depth interviews was carried out. In-depth interviews allowed the researcher some access to RMs' experiences, opinions, beliefs, feelings and judgments of DBs in their departments by asking them to tell the researcher about these verbatim. An exploration into the complex cultural and environmental factors around DBs and mitigatory interventions must necessarily capture and interrogate data that reflects meaning (Walrath *et al.* 2010: 105). The use of the qualitative phase in this study supports the idea that there is no external reality or truth. Rather, people construct or make sense of their individual world, and this phase tries to 'tap into' this world (Roberts and Priest 2010: 150). In a questionnaire the investigator undertakes that the questions asked are unequivocal and relevant, but the assumption in an interview is rather different (Britten 1995: 251). The basis for in-depth interviews is to get extended accounts from participants (Codó 2009: 158). In-depth interviews are frequently considered to be a form of conversation, making them one of the most substantial means of collecting data (Showkat and Parveen 2017: 6). As this strand was about exploring different managers viewpoints instead of seeking consensus, one-on-one interviews were chosen over focus groups, considering that organising one-on-one interviews were also logistically easier (Polit and Beck 2014; Creswell 2016: 270). The purpose of this qualitative strand was to address the remaining objectives of the study, namely (c) to explore the environmental and cultural factors to mitigate DBs involving radiographers that impede a safe working environment and (d) to identify strategies to mitigate DBs involving radiographers in central hospitals in HMP.

4.9.1 Sampling of radiography managers

The RMs were identified with help from the Human Resources Department in each hospital. Eleven RMs from a total of 24, as shown in **Table 4.4** above, were selected by criterion purposive sampling (Creswell 2016: 275; Creswell and Poth 2018: 281). In this type of sampling, participants are selected from a population based on defined inclusion criteria (Terrell 2016: 76), which in this case was being in leadership. This type of sampling is used in the qualitative phase of mixed methods studies to allow the researcher to recognize small, specific groups for in-depth study (Teddie and Tashakkori 2009: 165; Polit and Beck 2014: 307). Radiography managers were selected such that their position within the hospital would allow them to provide authoritative and accurate responses about the mitigation of DBs.

4.9.2 Inclusion criteria

- Radiographers in leadership positions at the three central hospitals. These include the chief and principal radiographers.
- Radiographers who are registered with AHPCZ.

4.9.3 Exclusion criteria

- All other managers not directly linked to the Radiology department.
- Radiographers who are not registered with AHPCZ.

4.9.4 Data collection process and instrumentation

After attaining ethical clearance (IREC 097/20) from DUT (Appendix 1), the Ministry of Health and Child Care (Appendices 2a and 2b); the Medical Research Council of Zimbabwe (Appendices 3a and 3b); and HMP district administrators (Appendix 4b, 5b and 6b), the researcher requested permission from the Clinical Directors at the three central hospitals in HMP selected for the study (Appendices 4a and 5a). After obtaining support letters, RMs were identified with the help of the

Human Resources Department in each hospital. Face to face, one-on-one and in-depth interviews with 11 RMs were carried out in accordance with an interview guide (Appendix 14). The interview guide was established specifically for this study as no previous research on DBs involving Zimbabwean radiographers was identified. The interview guide was developed to ensure that the key themes to the study were addressed and that it afforded a degree of flexibility to accommodate an examination of unanticipated occasions (Coleman 2019: 1881). The questions in the guide were informed by literature, input from the supervisory team and colleagues at the school of radiography. In order to explore the opinions of RMs, there must be a way to communicate the phenomenon under study to the respondents through the phrasing of the interview questions. Accordingly, the terms selected for the interview questions originated from within the selected theoretical framework. The fundamental components of the AL Theory also facilitated the development of areas of focus amongst the interview questions. This is according to Adom *et al.* (2018: 438), who argue that the chosen theoretical framework guides and should resonate with every facet of the research process, including the methodology.

The researcher in this case had experienced similar professional socialisation to the interviewees. As such, the researcher did not need to learn the language employed by radiographers to be able to formulate culturally appropriate questions. However, since the researcher was a member of one of the organisations sampled in the study, the researcher was forced re-examine their beliefs about these unprofessional behaviours to ensure that “familiarity did not distort their approach to the planning, implementation and interpretation of the in-depth interviews” (Coleman 2019: 1881). After explaining the purpose of the interview and why the participant was chosen, each interviewee was asked to select a place where they were comfortable to carry out the interview, such as their offices, the interviewer’s office or home. This was in accordance with an assertion by Anderson and Jones (2009: 291) that venues are to some extent

responsible for how knowledge is accessed, formulated and expressed. Coleman (2019: 1881) and Creswell (2016: 278) recommend that an interview venue should be private, quiet and carefully arranged in respect of proximity to the interviewee.

The interviews took place at a time proposed by the interviewee between 8am and 4pm, consistent with normal working hours for RMs in public service. COVID-19 protocols according to the Ministry of Health and Child Care and World Health Organisation were observed. Miltiades (2008: 277) avers that the time of day in which interviews are scheduled may also affect participants' responses. Therefore, Coleman (2019: 1881) recommends that a researcher should plan interviews to take place at a time chosen by the participant in the anticipation that this approach will best help put individuals at ease. The RMs were requested to participate voluntarily in the study and were informed that they could withdraw any time during the study if they so wished, without any penalty. In addition, the researcher informed participants that their names will be anonymous and that the information collected from them will be confidential. In so doing, the researcher used pseudonyms and the information collected from them will only be known to the researcher.

Participants were given letters of information about the study (Appendix 4) and if they agreed to participate in the study, they were asked to sign letters of consent (Appendix 15). The interviews were audio-recorded using a DU Recorder 2.44 for android, with the permission of the participants. The initial questions in the interview guide were used to establish that each respondent was satisfied the inclusion criteria. Demographic questions were then introduced to build a profile of each interviewee and to add to the overall picture of RMs in HMP. The interview was directed by open-ended questions that led into the topical areas. Researchers advise on using open-ended questions in the case of in-depth interviews (Boyce and Neale 2006: 5; Showkat and Parveen 2017: 7). Key topics were presented as questions and the participants were invited to describe their experiences of these

topics and to tell their stories of DBs in their respective departments. This was done while trying to create effective rapport that allows participants to relax, regard the interview as a collective activity, begin to trust the researcher and speak honestly and openly (Coleman 2019: 1882). The interviews were carried out for a duration of 30-60 minutes and data was collected until data saturation. Data saturation is used in qualitative inquiries as a standard for terminating the collection of data. When conducting interviews, saturation occurs at the point where the additional collection of data becomes 'counter-productive', and where the 'new' data does not necessarily add anything to the overall theory or story (Saunders *et al.* 2018: 1895). According to Fusch and Ness (2015: 1408), "failure to reach saturation has an impact on the quality of the research conducted".

Pilot study

Pilot interviews were done with three RMs selected from each of the three central hospital department in HMP. Piloting for interviews is critical to trial the questions and to gain some rehearsal in interviewing (Aliff *et al.* 2017: 1073). Castillo-Montoya (2016: 811) established that interview guides could be strengthened through doing pilot interviews. After obtaining consent from the interviewees, full-length interviews were done until data saturation. The interviews were audio recorded and transcribed for analysis. The responses from the interviews were used to refine the interview guide accordingly.

4.9.5 Data analysis

Marshall and Rossman (2016: 399) describe data analysis as "the process of bringing order, structure and meaning to the mass of collected data. It is a messy, ambiguous, time-consuming, creative and fascinating process. It does not proceed in a linear fashion: it is not neat". Before profound analysis of the data was carried out, a meticulous transcription of the interviews was done by the researcher.

4.9.5.1 Interview transcription

For qualitative data analysis, preparing the data means transcribing text from interviews into word documents for analysis (Creswell and Plano Clark 2018: 314). Interview transcripts are a hallmark of qualitative data and they are usually viewed as essential to the rigorous collection and analysis of data. As Bailey (2008: 130) states, “transcribing is an interpretive act rather than simply a technical procedure, and the close observation that transcribing entails can lead to noticing unanticipated phenomena”. Indeed, transcripts are not only significant to the collection of data, as they are also the way that interviews yield real-time data. They are also useful for rigorous and valid analysis of data. Therefore, the researcher, following counsel from Oliver *et al.* (2005: 14), ensured that there was meticulous transcription of the interview data. Transcribing the interviews helped keep the study accurate as a written transcription allowed the interviewees to be quoted verbatim. This assisted the current study to adhere to the standard protocol that qualitative studies necessitate, including context, credibility and transferability (Jacobs 2020: 1). Thereafter, a copy of the transcripts was sent for verification and editing by the interviewee within 48 hours. This was done as part of the participant validation strategy (also known as “Member Checks”) to further enhance credibility (Ravitch and Carl 2016: 198). All the audio taped in-depth interview data from RMs were serialised and coded in accordance with the source. Each interview was assigned a code. For example, “Interview 1, 20 February 2021”.

4.9.5.2 Analysis

The interview data was analysed, organised and interpreted using Tesch's method of qualitative analysis (Tesch 1992: 117; Creswell 2009: 173). Eight steps have been postulated for this method. The suggested steps were followed religiously as described below:

1. The interview transcripts were read and re-read to get an overall understanding of the whole interview. The ideas that immediately came to mind were written on the borders of the transcripts.
2. The shortest interview transcript was selected and after reading, the thoughts about its general meaning were noted in the margins.
3. All the transcripts were read and a list of topics were made. Similar topics were clustered together. The clustered topics were formed into major topics, unique topics and leftovers.
4. The list of topics that was created in the previous step was taken and the researcher went back to the data. The topics were shortened as codes and they were written as codes next to the appropriate segments of the text. This was repeated to see if new categories and codes emerged.
5. The topics were then turned into categories. Related categories were then grouped together. A diagram was drawn to show interrelationships between the categories.
6. A final conclusion was made on the number given to each category.
7. After assembling the data fitting to each category, a preliminary analysis was done.
8. The data was recorded again in an iterative fashion.

The data was first manually coded on both hardcopy and in word. It was then entered into Nvivo (QSR International Version 11) for further analysis. A colleague who had experience with coding was used as an independent co-coder. The colleague assisted with the coding process of the first four interviews and after a unanimity conversation between the researcher and colleague, the researcher did the rest of the coding. The researcher then went back to six of the participants to

authenticate the analysed data (Ravitch and Carl 2016: 198). Specifically, the data was analysed for constituents that addressed the following:

- Codes on issues that the audience would expect to find, based on common sense and the previous literature;
- Codes that are unanticipated and that were not expected at the beginning of the study; and
- Codes that are rare, i.e. that are of theoretical importance to the audience (Creswell 2009: 173).

4.10 TRUSTWORTHINESS FOR THE QUALITATIVE STUDY

Qualitative research is grounded on the accounts of the interviewees, such as carried out in this study, required for the establishment of rigour (Nowell *et al.* 2017: 3). Rigour has been used to express attributes associated with the qualitative research procedure. Lacking rigour, research is valueless, becomes deceptive and loses its use. Qualitative research must be carried out with extreme rigour because of the possibility of bias that is intrinsic in this type of study (Cypress 2017: 254). There are several approaches available to enhance the reliability of the findings of qualitative research and minimize bias. Trustworthiness is one avenue through which scholars can convince themselves and readers that their research outcomes are reliable (Teddie and Tashakkori 2009: 31). Therefore, this study was assessed using the four criteria for developing the trustworthiness of qualitative research as postulated by Lincoln and Guba (2013: 104), namely credibility, dependability, conformability and transferability. Each of these four criteria was addressed for this study and the ways employed to ensure rigour are outlined below.

4.10.1 Credibility

Credibility discourses the “fit” between respondents’ views and the researcher’s depiction of them (Nowell *et al.* 2017: 2). This is analogous to the quantitative concept of internal validity (Ravitch and Carl 2016: 190). In the current study, credibility was achieved in various ways: Firstly, by the adoption of appropriate, well recognised research methods, in this case in-depth interviews with RMs. Credibility is linked directly to the study design and the investigator’s choice of instruments and data. Secondly, space triangulation was done, In this case, data was collected from RMs from five departments in three different hospitals (PGH, HCH and CCH) in HMP. Triangulation denotes the use of many referents to draw conclusions about what institutes truth. The goal of triangulation is to avoid the inherent bias that is derived from single-observer, single- method and single-theory studies. The rationale is to authenticate the data by testing for cross-site consistency (Polit and Beck 2014: 431). Thirdly, by allowing RMs to verify and edit the interview transcripts, the credibility of the study was further enhanced by the concept of “member checks” (Birt *et al.* 2016: 1807; Arora 2017: 447). Lincoln and Guba (1985: 314) consider “member checks” to be the most important way to establish credibility, asserting that “if the investigator is to be able to purport that his or her reconstructions are recognizable to audience members as adequate representations of their own (and multiple) realities, it is essential that they be given the opportunity to react to them”. Squibb (2013: 173) states that research is credible when it presents accurate descriptions and when the reader can make out the experience. Credibility in this study was therefore supported by RMs recognising their own experiences in the accounts provided by their professional colleagues.

4.10.2 Dependability

Dependability means that the research process is logical, traceable and clearly documented (Nowell *et al.* 2017: 2). It is juxtaposed with reliability from quantitative

studies. As with other validity concepts, a firm research design is fundamental to attaining dependability (Ravitch and Carl 2016: 191). To achieve dependability in this study, an in-depth methodological description was made to allow the study to be repeated by anyone. Dependability was also achieved by keeping a reflective journal of the justification behind decisions made because dependability is intrinsically linked with transparency (Lincoln and Guba 1985: 318).

4.10.3 Conformability

Conformability establishes that the researcher's interpretations and findings are clearly derived from the data, demanding the researcher to prove how conclusions and interpretations have been reached (Nowell *et al.* 2017: 2). In the study, an audit trail was kept transparent with the decisions and choices made with regard to theoretical and methodological issues (Lincoln and Guba 1985: 319). Since the researcher was a member of one of the organisations sampled in the study, there was a self-critical account of the research process with internal and external dialogues in a journal (Lincoln and Guba 2013: 105; Polit and Beck 2014: 435). This was important because, in qualitative research, the researcher is viewed as a primary instrument. Therefore, "the researcher must challenge himself and be challenged by others in systematic and ongoing ways throughout all stages of the research" (Ravitch and Carl 2016: 199).

4.10.4 Transferability

Transferability is concerned with the generalizability of the investigation (Nowell *et al.* 2017: 3). This is akin to external validity in quantitative studies (Ravitch and Carl 2016: 190). To achieve transferability, detailed background data was provided to establish the context of this study and a thorough description of data (thick description) so that readers can make contrasts to other settings based on as much information as possible (Lincoln and Guba 2013: 105; Drew 2020: 1).

4.11 INTEGRATION OF THE RESULTS IN THE CONVERGENT PARALLEL DESIGN

Integration in a convergent parallel design involves merging or bringing together the quantitative results with the qualitative results (Creswell and Plano Clark 2018: 71). Integration was necessary because “without integration, the knowledge yield is equivalent to that from a qualitative study and a quantitative study undertaken independently, rather than achieving a whole greater than the sum of the parts” (O’Cathain *et al.* 2010: 1). A parallel-databases variant was used during the integration of the results. This is the common approach in which two parallel strands of data are collected and analysed independently and are brought together during the interpretation (Creswell and Plano Clark 2018: 73).

4.12 ETHICAL CONSIDERATIONS

According the Declaration of Helsinki, a researcher must take into account the legal, ethical and regulatory values and principles for research involving human subjects in their own states, as well as applicable international values and principles (Kong and West 2013: 3). The fundamental ethical principle is not to cause any type of harm to research participants. To warrant that ethics were upheld, letters of approval were sought from the DUT IREC (Appendix 1), Ministry of Health and Child Care (Appendix 2) and the Harare province district administrators (Appendix 4-6). Permission was also requested from the Medical Research Council of Zimbabwe (Appendix 2), Parirenyatwa Group of hospitals (Appendix 7), Harare Central Hospital (Appendix 8) and Chitungwiza Central Hospital (Appendix 9) clinical directors respectively.

The researcher gave the Letter of Information about the study (Appendices 10 and 12) and Consent Form to sign (Appendix 11 and 12) before the participants completed questionnaires and did the interviews. All the participants’ participation was voluntary, and they were told that they could withdraw from the study at any

time, if they so wished. The participants were informed that their information is confidential, and it would be used solely for the purpose of the study and would be disposed of once it had been processed for research purposes. Signed consent forms were obtained before data collection. The researcher also ensured that the participants' information was kept confidential.

4.13 SUMMARY OF THE CHAPTER

This chapter has presented and justified the research methodology employed in this thesis, as well as its rigour. The research question was best served by the analysis of both quantitative and qualitative data collected through questionnaires and in-depth interviews. The selection of mixed methods, pragmatism, questionnaires and in-depth interviews was vindicated. The methodology was also appropriate for a study underpinned by the Authentic Leadership theoretical framework. The analysis and interpretations of the questionnaire data, along with data from in-depth interviews, are presented in the succeeding two chapters. In telling the story of the data, these chapters uncover the complex impact of DBs on low resource setting radiography work environments through the voices of the radiographers themselves.

CHAPTER 5: PRESENTATION OF QUANTITATIVE RESULTS

5.1 INTRODUCTION

As described in the previous chapter, this study employed a convergent parallel mixed-methods design. The aim of the study was to explore DBs involving radiographers, and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. Both quantitative data and qualitative data were collected simultaneously. Nevertheless, in accordance with the research design, the qualitative data was analysed independently before the analysis of the quantitative data. In this way, the quantitative analysis would not prejudice the results of the qualitative analysis. This chapter is the first of the two results chapters. It comprises the presentation of the results from the quantitative strand carried out to address the following research questions:

1. *Which DBs involving radiographers impede a safe work environment at central hospitals in HMP?*
2. *What are the consequences of DBs involving radiographers employed by central hospitals in HMP?*

Indeed, in order to develop a tailor-made framework to mitigate DBs, it was necessary to collect data that sheds light on the prevalence, causes and consequences of DBs involving radiographers in HMP. The design of effective interventions to mitigate these behaviours is closely tied to an accurate knowledge of their causes and consequences (Keller *et al.* 2020: 2). A comprehensive description of the research methods and procedures was given in Chapter 4. The results will be presented in both text and figure or tabular format, starting with the socio-demographic and professional characteristics of the participants. Secondly,

an evaluation of DBs involving radiographers in HMP is presented. Lastly, a summary will conclude the chapter.

5.2 SOCIO-DEMOGRAPHIC AND PROFESSIONAL CHARACTERISTICS OF RESPONDENTS

A total of 100 (n=100) radiographers working at the three central hospitals in HMP participated in the survey. The collection of data took place in February 2021. The personal, job and work-related demographics of the participants are described below.

5.2.1 Personal demographics

The sample consisted of 56 female (56%) and 44 male (44%) radiographers, all at least 21 years old. Most of the radiographers (70%) were in the age group 21-30, 25% were in the age group 31-40 and only 5% were above 40 years of age. In terms of marital status, the majority of radiographers were single (72%), 24% were married and the remainder were either divorced (4%) or widowed (1%). Regarding academic qualifications, 87% had a Bachelor's degree, 10% were holders of a master's degree and only 3% had a diploma as the highest qualification (Figure 5.1).

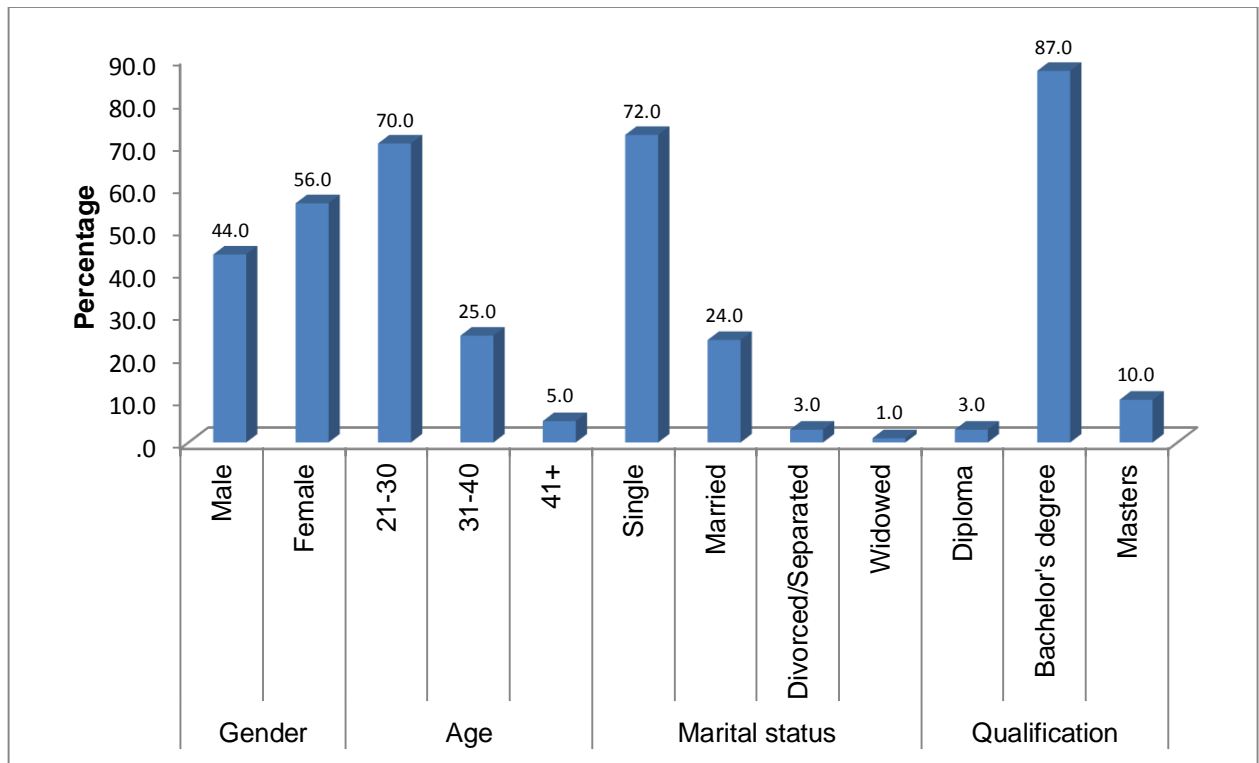


Figure 5.1: Summary of the gender, age, marital status and qualification of participants

5.2.2 Job-related demographics

Most of the radiographers (53%) in the sample were employed at Hospital A. The radiographers were drawn from the three radiography departments, namely radiology, radiotherapy and the school of radiography, which incorporates Nuclear Medicine. The other 28% was from Hospital B and 19% from Hospital C, both of which have radiology departments only. Fifty-four percent of the sample had more than 20 co-workers, 43% had 11-20 and just 3% had up to 10, as shown in Figure 5.2 below.

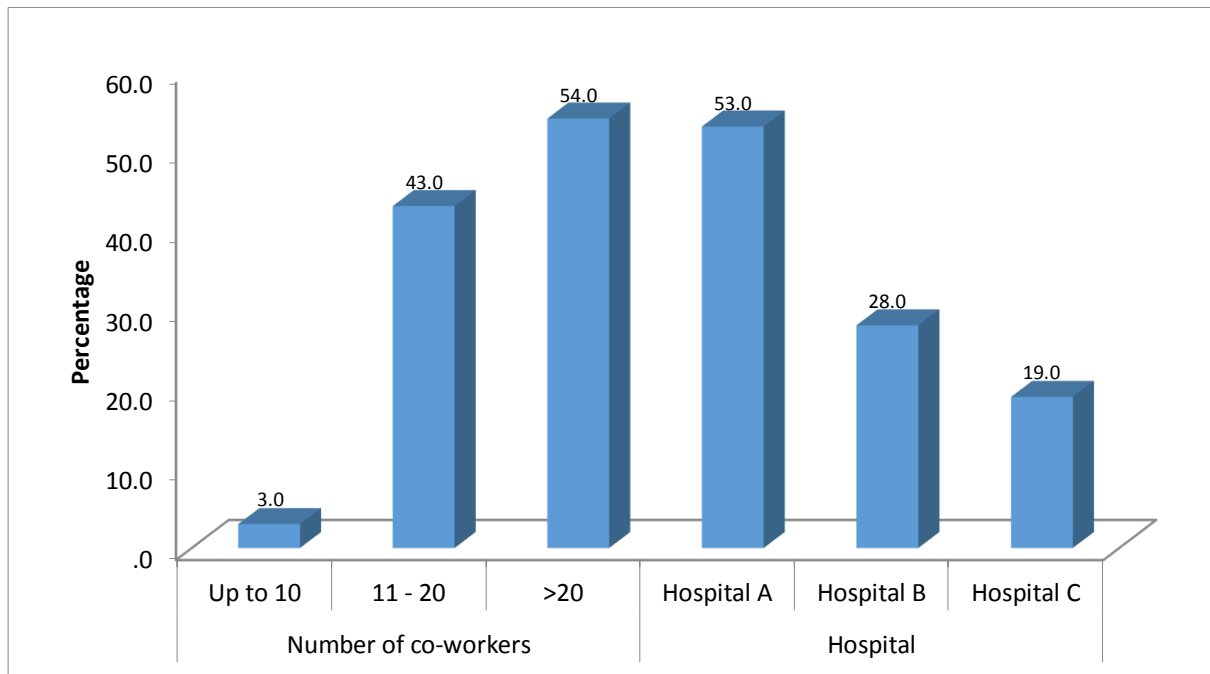


Figure 5.2: Job related demographics

5.2.3 Work-related demographics

A large proportion of the radiographers (66%) had less than 5 years' work experience, 18% had 5-10 years' work experience and 6% had over 15 years' work experience. In terms of the grade, 65% were basic radiographers, 21% were senior radiographers, 9% principal grade and 5% were chief radiographers. There is a chief radiographer for each of the five radiography departments in the central hospitals in HMP. **Figure 5.3** below summarises the work-related characteristics of respondents (n=100).

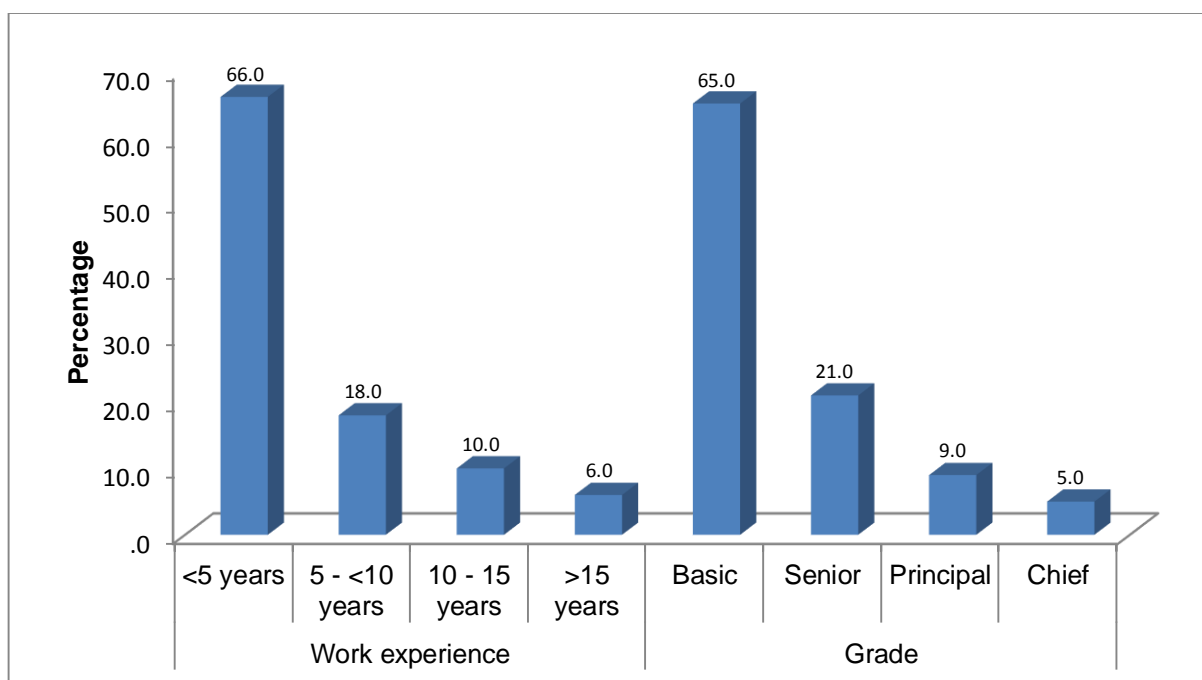


Figure 5.3 Summary of work experience and grades of the participants

Table 5.1 below gives an overall summary of all the characteristics of the participants.

Table 5.1: Summary of socio-demographic and professional characteristics of respondents

Characteristic	Number (n)	Percentage (%)
Gender		
Male	44	44.0
Female	56	56.0
Age group		
21-30	70	70.0
31-40	25	25.0
40 and above	5	5.0
Marital Status		
Single	72	72.0
Married	24	24.0
Divorced/Separated	3	3.0
Widowed	1	1.0
Work experience (Years)		
Below 5	66	66.0
5-9	18	18.0
10-15 and above	10	10.0
	6	6.0
Academic qualification		
Diploma	3	3.0
Bachelor's degree	87	87.0
Master's Degree	10	10.0
Grade		
Basic radiographer	65	65.0
Senior radiographer	21	21.0
Principal radiographer	9	9.0
Chief radiographer	5	5.0

5.3 DISRUPTIVE BEHAVIOURS INVOLVING RADIOGRAPHERS THAT IMPEDE A SAFE WORK ENVIRONMENT AT CENTRAL HOSPITALS IN HMP

5.3.1 Prevalence of DBs involving radiographers in HMP

Participants were asked: *have you ever been exposed to an incident of DB at your workplace in the past 12 months?* A significant 61% of the radiographers indicated that they had been exposed more than once, ($\chi^2 (2) = 34.820, p < .0005$). In addition, 22% had been exposed only once and 17% indicated that they had not

been exposed to a single incident of DB in the past year prior to the study. This therefore gives an overall prevalence of 83% at the time of the study (**Table 5.2**).

Table 5.2: Summary of radiographers exposed to incidents of DBs (n=100)

Exposure to DBs	Percentage (%)	Cumulative percentage (%)
Yes		
Once	22	22
More than once	61	83
Not at all	17	100

When asked if: *they had ever witnessed a radiographer being exposed to a DB incident in their current workplace in the past 12 months*, a significant 74% of radiographers in HMP said they had indeed witnessed at least one, ($\chi^2 (1) = 23.040$, $p < .0005$). The results are shown in Figure 5.4 below. A bivariate analysis was done and a significant number of 31-40 year olds pointed out that they had witnessed a radiographer being exposed to an incident of DB in the workplace; while a significant number of 21-30 year olds had not, with Fisher's exact = 11.898, $p = .002$.

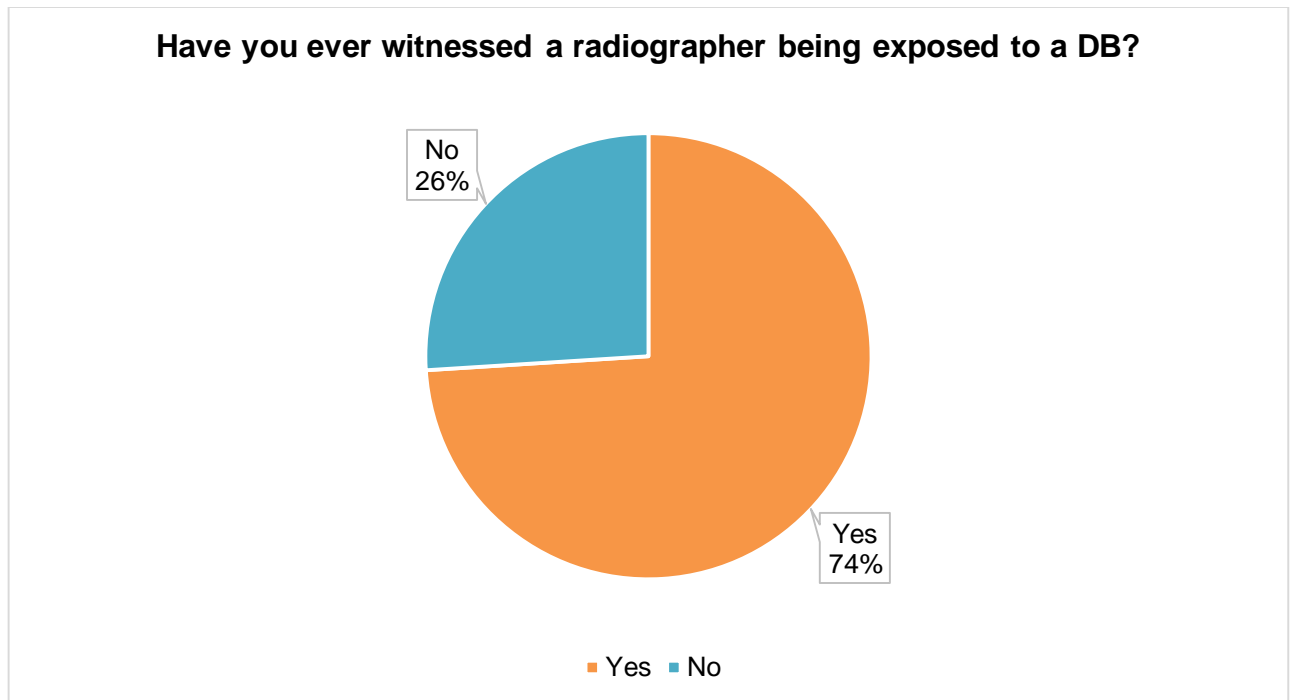


Figure 5.4: Proportion of radiographers that have witnessed a radiographer being exposed to an incident of DB

5.3.2 Types of DBs involving radiographers

The reported types of DBs involving radiographers included:

- verbal abuse: the examples include being yelled at, cursing, degrading/negative comments or insults, being humiliated, being intimidated;
- physical abuse: the examples comprise being beaten up, pushed, slapped or kicked; and
- sexual abuse: which includes inappropriate sexual jokes or sexual behaviours.

All three types of DBs were reported by radiographers in HMP. However, the incidence of verbal abuse was higher than that of sexual and physical abuse. Most of the radiographers reported verbal abuse, followed by sexual abuse and then

physical abuse. A significant 81% had been exposed to verbal abuse, ($\chi^2 (1) = 45.375, p < .0005$). A further 21% were exposed to sexual abuse, ($\chi^2 (1) = 24.045, p < .0005$). Lastly, 4% were exposed to physical abuse, ($\chi^2 (1) = 73.719, p < .0005$).

Table 5.3 below summarises the prevalence of the different types of abuse suffered by radiographers. There was no statistically significant association between hospitals and being verbally abused. Additionally, age was not significantly associated with being verbally abused. A few radiographers only selected a response in a single category out of three. In cases where a participant answered the questions in one or two categories, the questions for the unaddressed categories were scored as missing and included in the analysis.

Table 5.3: Prevalence of the different types of DBs suffered by radiographers

Exposure to DBs	Verbal abuse	Physical abuse	Sexual abuse
	%	%	%
Yes	81	4	21
No	15	85	67
Missing	4	11	12
Total (%)	100	100	100

Figure 5.5 below applies to only those radiographers who have experienced one of the above three types of harassment.

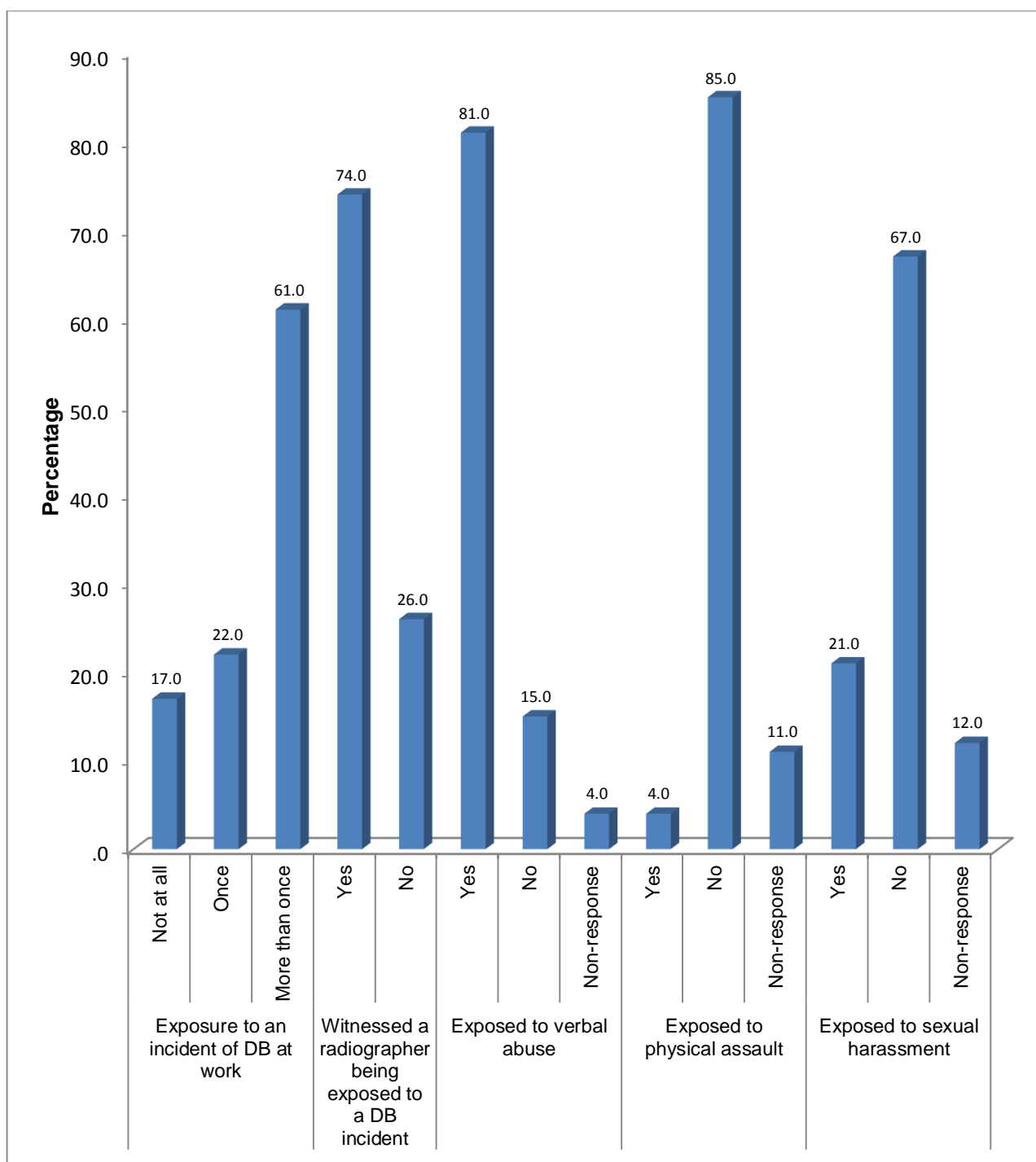


Figure 5.5: Summary of prevalence and types of DBs radiographers encountered

A total of 21 radiographers suffered sexual abuse, whereby the majority of 71 % (n=15) were female and 29% (n=6) were male (**Figure 5.6**). A calculation of the prevalence odds ratio revealed that female radiographers were 1.8 times more likely than their male counterparts to be victims of workplace sexual abuse (95% C.I.: 0 – 3.04). On the other hand, the bivariate analysis showed that a significant number of males indicated that they had NOT been verbally abused, $p=.012$, compared to women. Additionally, a significant number of females had been abused by a fellow radiographer, $p=.015$; whilst a significant number of males indicated that they had been abused by a doctor, $p=.032$.

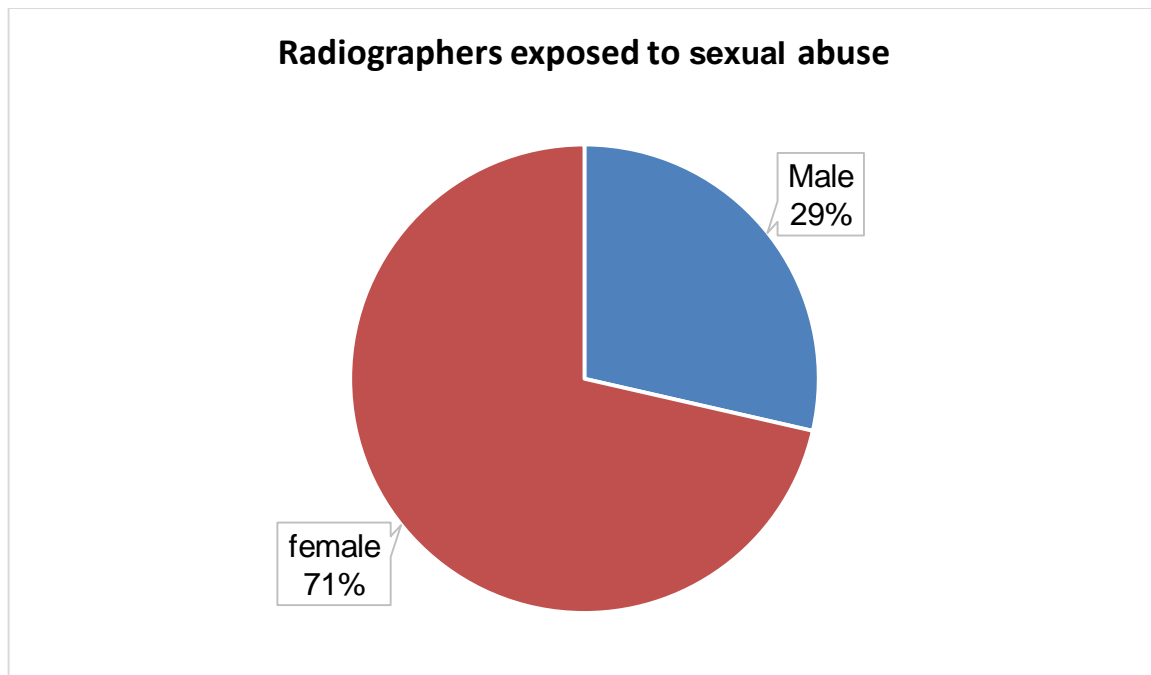


Figure 5.6: Proportion of radiographers that were sexually abused

5.3.3 Perpetrators of DBs involving radiographers

Radiographers who had experienced DBs in their workplace were asked to state the perpetrators (**Figure 5.7**). The respondents described perpetrators of DBs as mainly patients and their families/escorts. A significant 69% had been abused by

a family member or escort of a patient, $p=.001$. Radiographers abused by fellow radiographers, senior management and doctors were 31.3%, 30.1% and 30.1% respectively. Amongst those that were abused by any other, most mentioned nurses ($n=5$) and security guards ($n=2$) as the culprits.

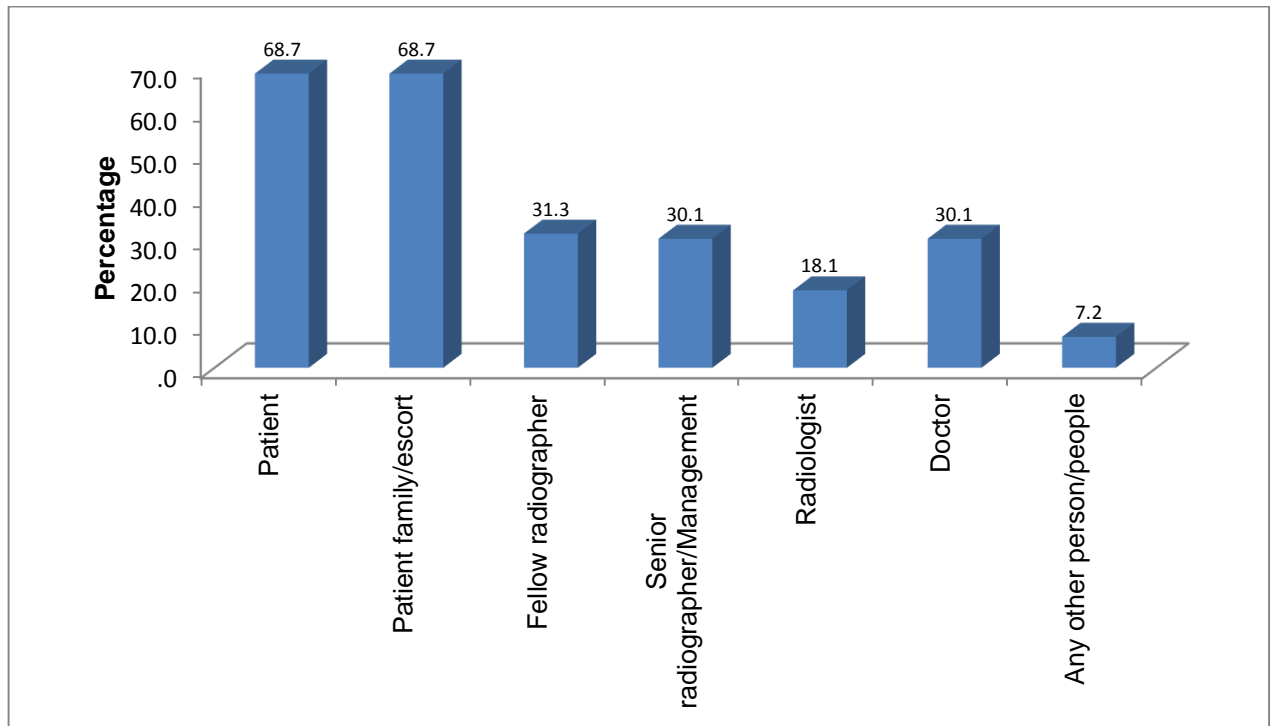


Figure 5.7: Perpetrators of DBs involving radiographers

5.4 CAUSES OF DBs INVOLVING RADIOGRAPHERS

The questionnaire included a question about the causes of DBs. It asked participants to describe what, in their opinion, triggers these behaviours in their workplaces. A Likert scale ranging from one (very low) to five (very high) was used to indicate participants' levels of agreement. **Figure 5.8** below summarises the triggers of DBs involving radiographers. There was a significant agreement that the following are triggers of DBs: frustration due to poor working conditions ($M=3.93, p<.0005$); long waiting times for patients ($M=3.91, p<.0005$); a sense of

privilege and status for those at the top ($M=3.87.p<.0005$); burnout or fatigue ($M=3.79.p<.0005$); narcissism ($M=3.79.p<.0005$); differences in communication styles ($M=3.68.p<.0005$); divergence of opinions/thoughts (e.g. differing views as to how a procedure should be carried out) ($M=3.59.p<.0005$); personal conflicts or family problems ($M=3.57.p<.0005$); self-protection against feelings of inadequacy ($M=3.42.p<.0005$); dysfunctional organizational culture (e.g. the organisation is not effective in ensuring patient/employee safety) ($M=3.38.p<.0005$); and cultural, generational or gender bias ($M=3.32. p<.0005$).

However, there was no significant agreement or disagreement that substance abuse by any of the parties ($M=3.15.p>.0005$) and psychiatric disorders ($M=3.03.p>.0005$) were the triggers of DBs. Table 5.4 shows the mean agreement of all the choices that the participants were given.

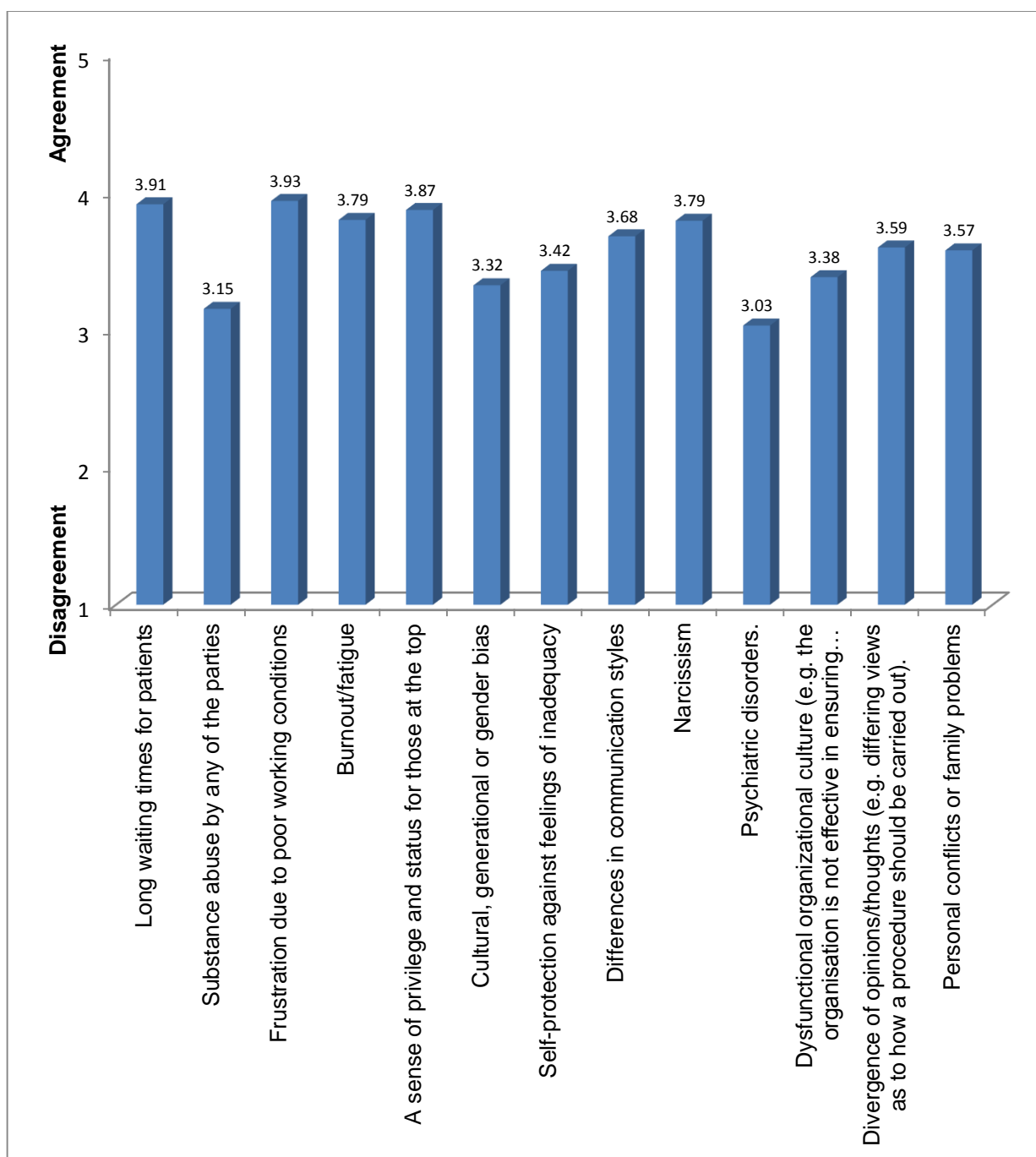


Figure 5.8: Level of agreement for the triggers of DBs involving radiographers

Table 5.4: Summary of the causes/Triggers of DBs involving radiographers

Item	Responses as Frequency (%)					N	Mean (SD)	t	df	p-value
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree					
1. Long waiting times for patients	4 (5.3)	5 (6.6)	6 (7.2)	40 (52.6)	21 (27.6)	76	3.91 (1.048)	7.553	75	<.0005*
2. Substance abuse any of the parties	8 (10.6)	17 (23.0)	20 (27.0)	14 (16.9)	15 (20.3)	74	3.15 (1.289)	0.992	73	>.0005*
3. Frustration due to poor working conditions	4 (5.4)	9 (12.2)	5 (6.8)	26 (35.1)	30 (40.5)	74	3.93 (1.209)	6.636	73	<.0005*
4. Burnout/fatigue	4 (5.5)	8 (11.0)	9 (12.3)	30 (41.1)	22 (30.1)	73	3.79 (1.154)	5.881	72	<.0005*
5. A sense of privilege and status for those at the top	1 (1.3)	9 (12.0)	14 (18.7)	26 (34.7)	25 (33.3)	75	3.87 (1.057)	7.101	74	<.0005*
6. Cultural, generational or gender bias	2 (2.8)	13 (18.1)	23 (31.9)	28 (38.9)	6 (8.3)	72	3.32 (0.952)	2.819	71	<.0005*
7. Self-protection against feelings of inadequacy	2 (2.7)	11 (15.1)	21 (28.8)	32 (43.8)	7 (9.6)	73	3.42 (0.956)	3.794	72	<.0005*
8. Differences in communication styles	1 (1.4)	9 (12.2)	15 (20.3)	37 (50)	12 (16.2)	74	3.68 (0.938)	6.197	73	<.0005*
9. Narcissism	1 (1.4)	7 (9.9)	16 (22.5)	29 (40.8)	18 (25.4)	73	3.79 (0.984)	6.751	70	<.0005*
10. Psychiatric disorders	12 (16.7)	18 (25.0)	10 (13.9)	20 (27.8)	12 (16.7)	72	3.03 (1.374)	0.172	71	>.0005
11. Dysfunctional organizational culture (e.g. the organisation is not effective in ensuring patient/employee safety)	6 (12.2)	9 (12.2)	25 (33.8)	19 (25.7)	15 (20.3)	74	3.38 (1.179)	2.762	73	<.0005*
12. Divergence of opinions/thoughts (e.g. differing views as to how a procedure should be carried out).	3 (4.1)	7 (9.5)	15 (20.3)	41 (55.4)	8 (10.8)	74	3.59 (0.950)	5.386	73	<.0005*
13. Personal conflicts or family problems	2 (2.7)	10 (13.3)	17 (22.7)	35 (46.7)	11 (14.7)	75	3.57 (0.989)	5.022	74	<.0005*

*** indicates significance level at the 95% level**

5.4.1 Reporting of incidents of DBs

When the radiographers who had been exposed to incidents of DBs were asked if they had reported the cases, a significant 60.2% did not report the cases, $p=.001$.

Figure 5.9 below summarises the findings. A significant number of radiographers with 5-9 and >15 years' work experience had reported the incidents of DBs that they had encountered, with Fisher's exact = 11.469, $p=.007$. Similarly, a significant number of chief radiographers had reported the incidents of DBs they had encountered, with Fishers exact = 9.642, $p=.015$.

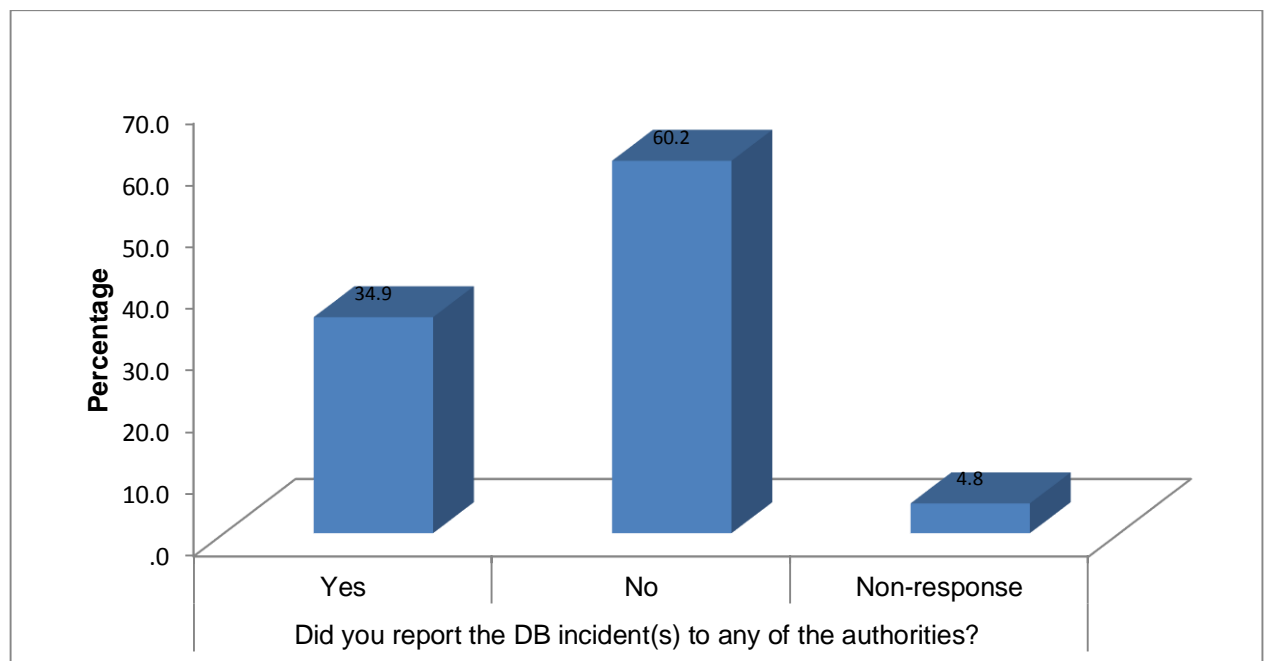


Figure 5.9: Reporting of DB incidents by radiographers

When radiographers that were exposed to incidents of DBs and did not report were asked the reasons, a significant 32.7% felt that no action will be taken, while 20.4% did not know where to report the incident, $\chi^2 (6) = 21.120$, $p<.0005$. Other reasons were: I was afraid of negative consequences (14%), part of the job (14%), was not

important (14%), I felt ashamed (4%) and solved the problem on my own (2%). The bar graph in **Figure 5.10** below shows a summary of the reasons.

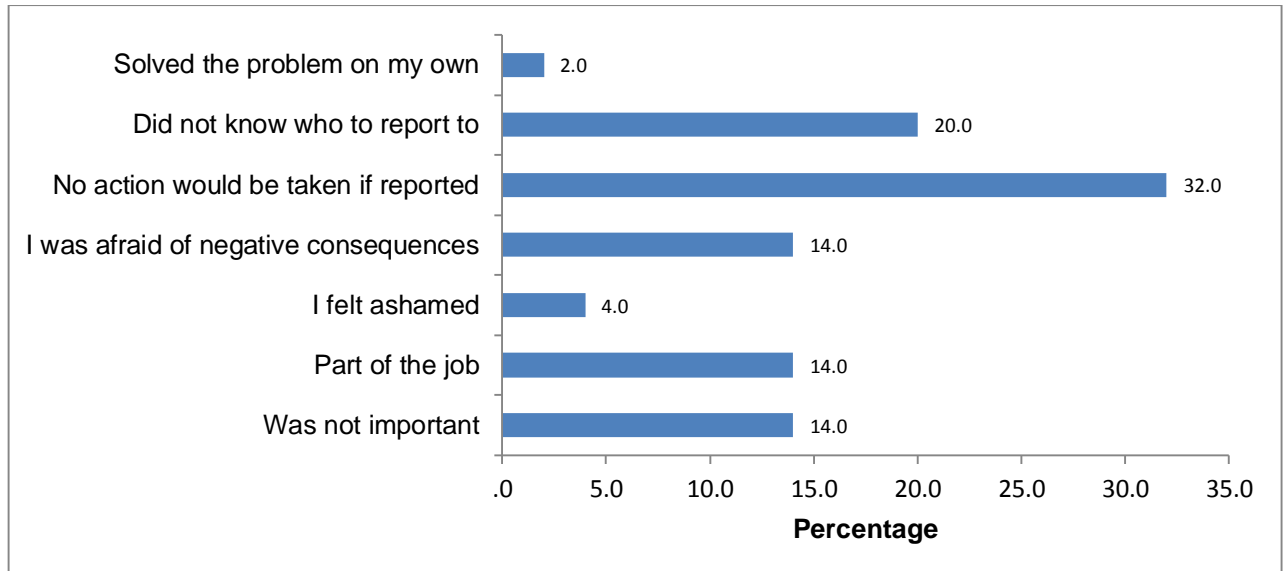


Figure 5.10: Reasons for not reporting DB incidents by radiographers

There were also radiographers who were abused by patients and did not report the incidents to the authorities. The majority (32.4%) indicated that they felt that no action will be taken if they reported the incident. A further 19.0% felt that they did not know where they should report; 16.2% were afraid of negative consequences; 13.5% felt that the incident was not important; 13.5% were of the opinion that it was part of the job; 2.7% just felt ashamed; and lastly, 2.7% solved the issue on their own (**Table 5.5**).

Table 5.5: Reasons for not reporting abuse from patients

Reason for not reporting	Frequency (n)	Percentage (%)
1. Was not important	5	13.5
2. Part of the job	5	13.5
3. Felt ashamed	1	2.7
4. Afraid of negative consequences	6	16.2
5. No action will be taken	12	32.4
6. Did not know where to report	7	19.0
7. Any other: Solved problem on my own	1	2.7
Total	37	100

The radiographers that reported incidents of DBs were then asked where they reported it. The majority used the channels within the department, i.e. they reported to the chief radiographers (37.7%) and senior radiographers (24.1%). However, a few cases were reported outside the department. For example, to the Clinical Director, Human resources and senior management. The bar graph in **Figure 5.11** below summarises the findings.

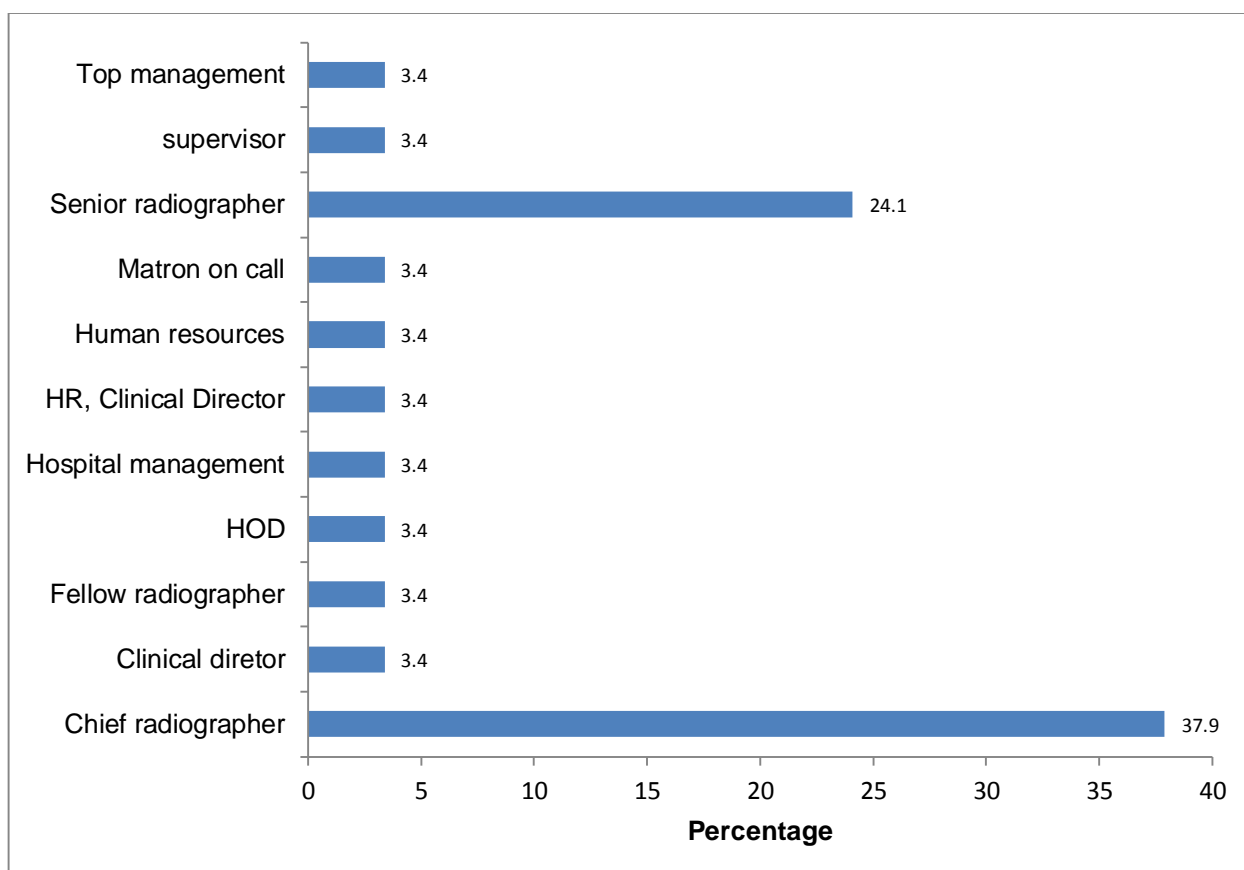


Figure 5.11: Authorities where DBs were reported by radiographers

For those who reported the incidents of DBs, 69% indicated that action was taken while 31% pointed out that no action was taken by the authorities (Figure 5.12).

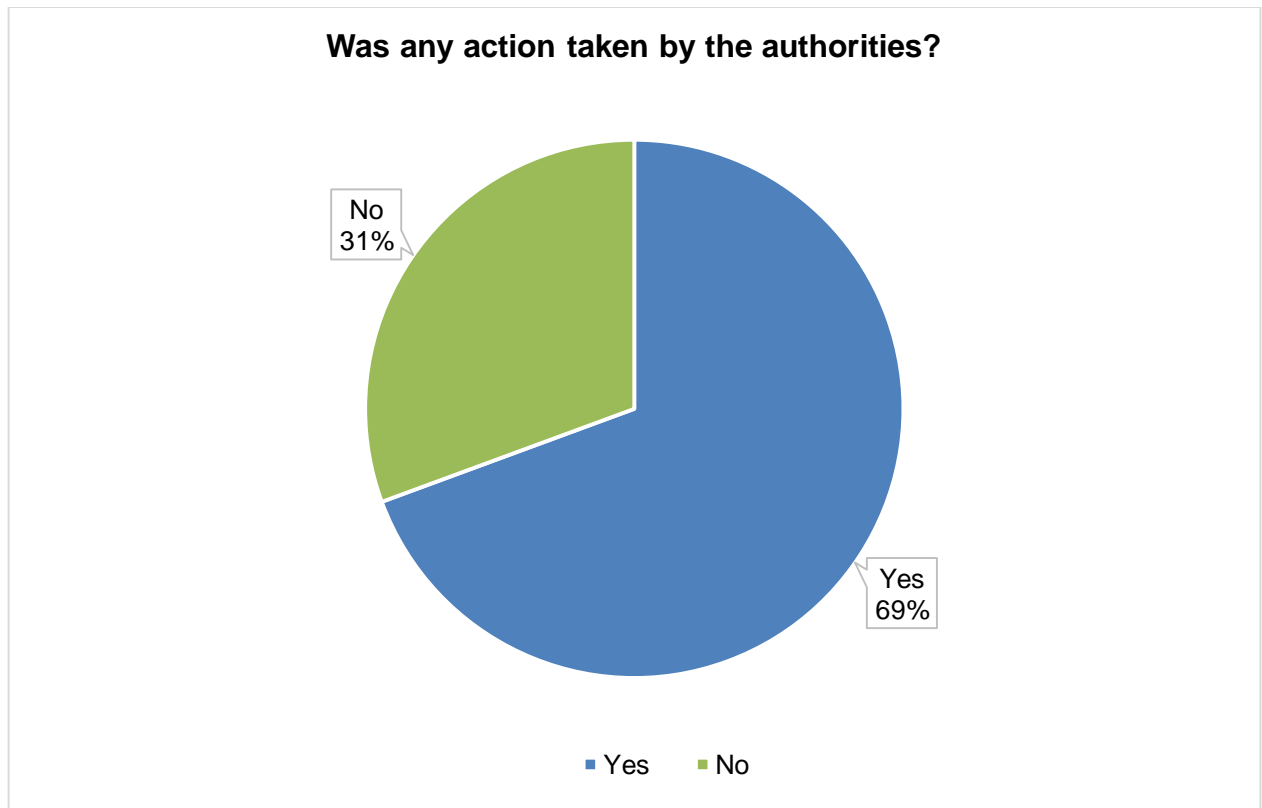


Figure 5.12: Was any action taken by authorities?

5.4.2 Action taken to address DB incidents

The questionnaire included open-ended questions. The first question asked radiographers who reported the incident of DB to specify the actions that were taken to address the conflict. All 29 radiographers who reported wrote a comment. After analysis of the open ended-question, participants' responses were categorised into four themes, namely: arbitration and reconciliation, caution, reprimand and switched duties. Figure 5.13 below shows that the majority of radiographers cited arbitration and reconciliation (37%), whilst a caution was given in (31%) of the cases, reprimand in 25% and lastly, in 7% of the cases, the radiographer's duty was switched to avoid further confrontation with the perpetrator. From the responses of the radiographers, no dismissal was reported for anyone committing any DB. The action against patients and their escorts

included reprimand and caution from the authorities. For the DBs that were committed by the radiographers, reconciliatory actions were taken within the department. However, in the conflicts that involved other healthcare professionals like doctors, actions taken comprised mediation by the chief radiographer, arbitration and hearings. Other radiographers mentioned that their duties were switched to avoid direct confrontation with the healthcare personnel concerned.

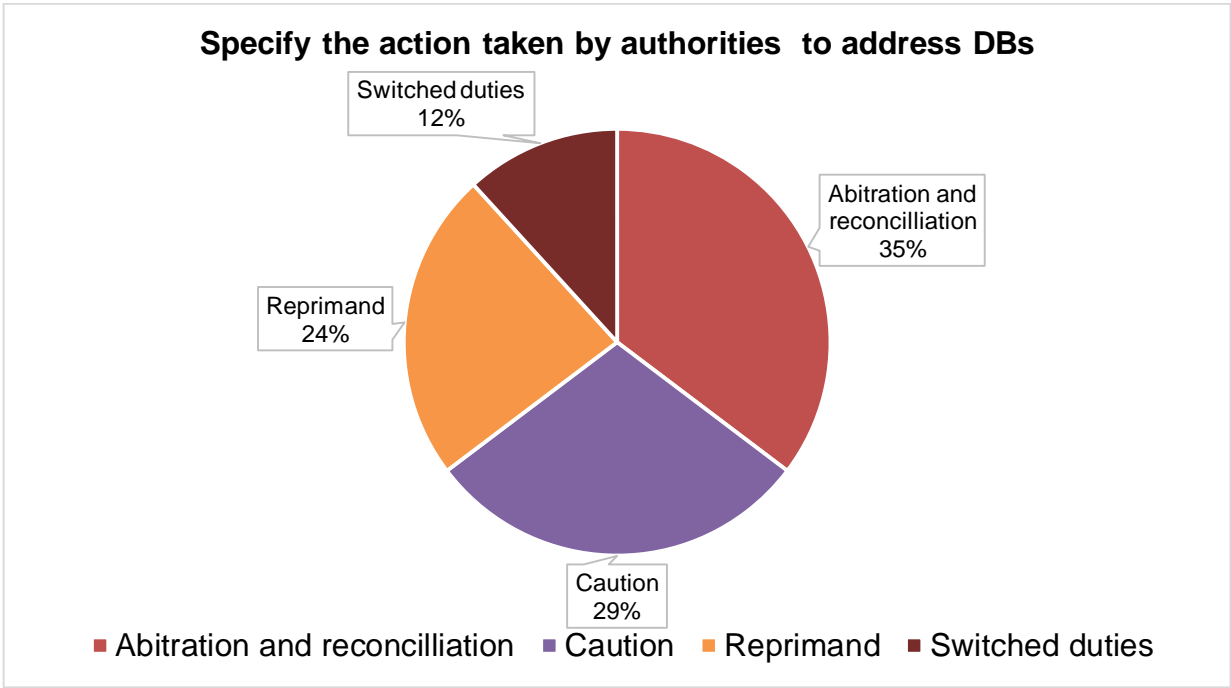


Figure 5.13: Actions taken by the authorities to address DBs

5.4.3 Coping mechanisms

The second open-ended question was, *how did you cope after the DB incident?* All 29 respondents also wrote down a comment. In this case, five major themes were identified, namely: ignored, spoke with colleagues, time off, avoided contact and therapy. The majority of radiographers (35%) indicated that they ignored the incident and acted as if nothing had happened, whilst 23% spoke to colleagues and family members about the incident. Another 19% took time off to go and

compose themselves, 12% avoided contact with the person concerned and lastly, only 11% went for therapy (**Figure 5.14**).

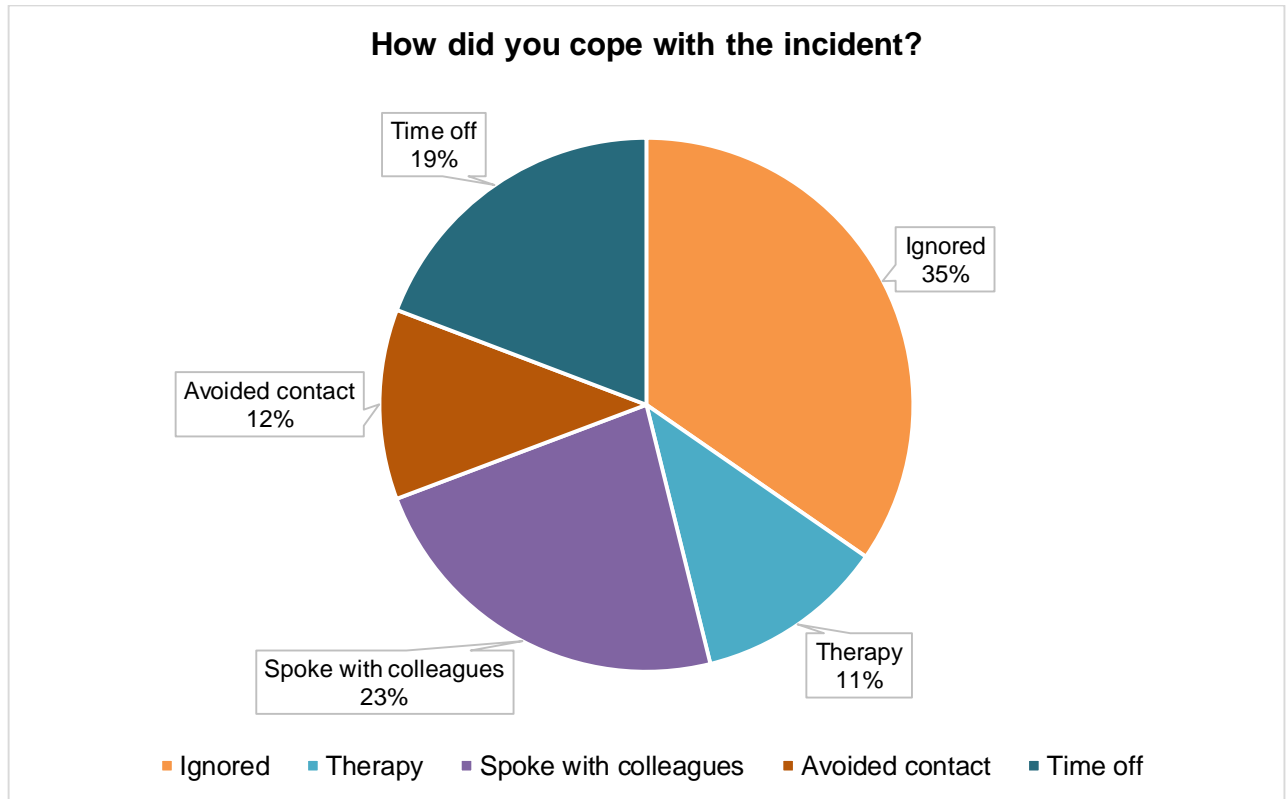


Figure 5.14: Coping mechanisms of radiographers

5.5 CONSEQUENCES OF DBs INVOLVING RADIOGRAPHERS

There is significant agreement that the following are the consequences of DBs involving radiographers from the greatest to the least: DBs create an unhealthy or hostile work environment ($M=5.36.$), $p<.0005$; DBs are a threat to the image of the organization ($M=5.24.$), $p<.0005$; DBs cause the recipient to experience fear, anger, shame and confusion ($M=5.21.$), $p<.0005$; DBs can affect optimum execution of my duties as a radiographer ($M=5.19.$), $p<.0005$; DBs can negatively affect collaboration in the Radiology department ($M=5.01$), $p<.0005$; DBs undermine patient confidence, making patients less likely to ask questions ($M=4.99.$), $p<.0005$; DBs impact negatively on organizational culture ($M=4.97.$),

$p < .0005$; DBs leads to compromised patient satisfaction ($M=4.95.$), $p < .0005$; DBs lead to compromised patient safety ($M=4.72$), $p < .0005$; DBs can affect the way I implement radiation protection protocols and procedures ($M=4.42$), $p < .0005$; and DBs increase radiographer resignations and absenteeism ($M=4.40$), $p < .0005$. **Figure 5.15** below shows the consequences of DBs involving radiographers, while Table 5.6 below gives a summary of the findings.

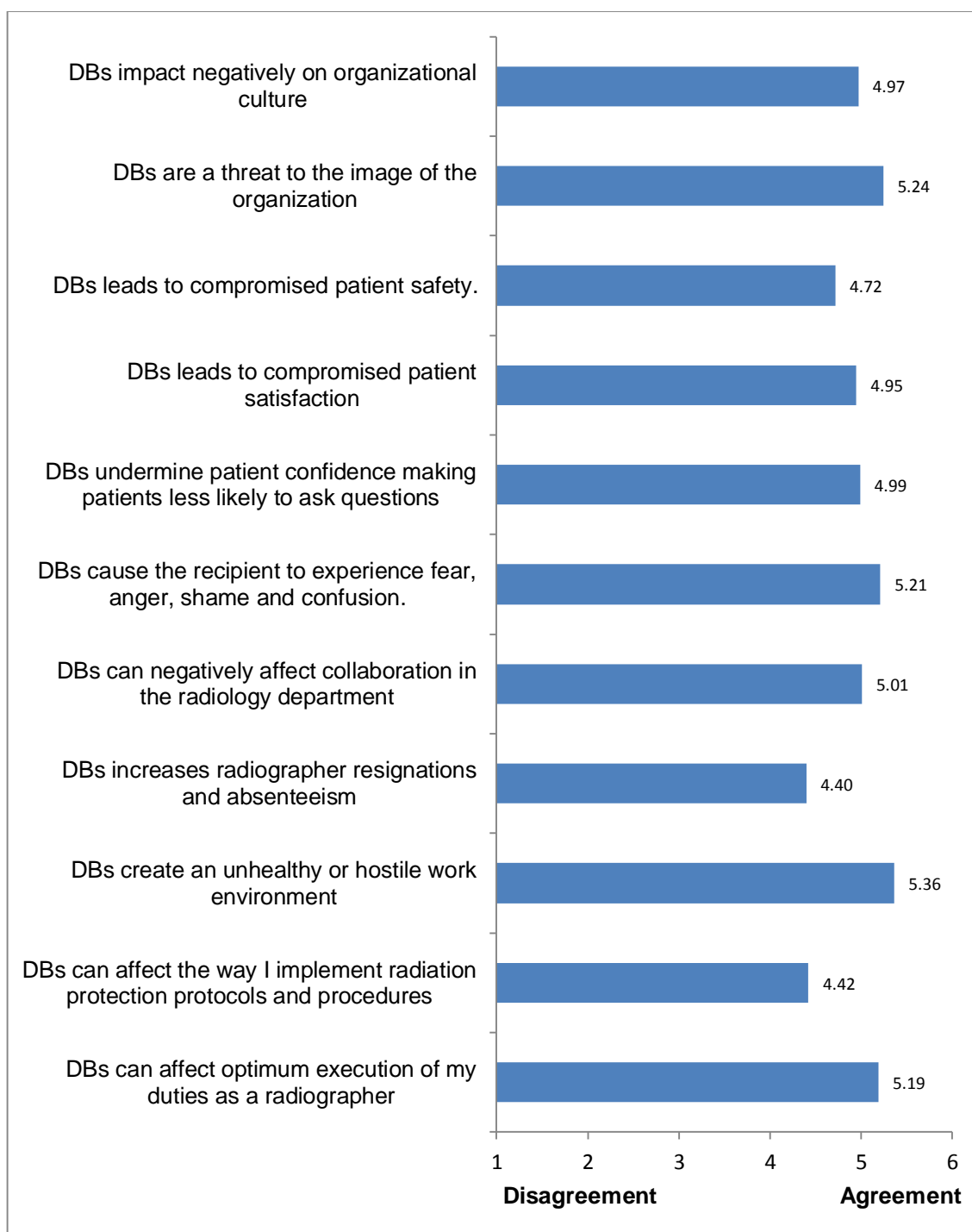


Figure 5.15: Consequences of DBs involving radiographers

Table 5.6: Summary of the consequences of DBs involving radiographers

Item	Responses as Frequency (%)						<i>n</i>	Mean (SD)	<i>t</i>	df	<i>p</i> -value
	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree					
1. DBs can affect optimum execution of my duties as a radiographer	6 (6.0)	1 (1.0)	0 (0.0)	77.1)	32 (32.3)	53 (53.5)	99	5.19 (1.283)	13.120	98	<.0005*
2. DBs can affect the way I implement radiation protection protocols and procedures	5 (5.1)	14 (14.1)	1 (1.0)	21 (21.2)	30 (30.3)	28 (28.2)	99	4.42 (1.519)	6.053	98	<.0005*
3. DBs create an unhealthy or hostile work environment	3 (3.0)	0 (0.0)	0 (0.0)	2 (2.0)	44 (44.4)	50 (50.5)	99	5.36 (0.942)	19.691	98	<.0005*
4. DBs increases radiographer resignations and absenteeism	7 (7.1)	5 (5.1)	9 (9.2)	14 (14.3)	47 (48)	16 (16.30)	98	4.40 (1.390)	6.394	97	<.0005*
5. DBs can negatively affect collaboration in the radiology department	1 (1.0)	2 (2.0)	4 (4.0)	13 (13.1)	47 (47.5)	32 (32.3)	99	5.01 (0.985)	15.262	98	<.0005*
6. DBs cause the recipient to experience fear, anger, shame and confusion.	2 (2.0)	2 (2.0)	0 (0.0)	7 (7.0)	48 (48.5)	40 (40.4)	99	5.21 (0.918)	18.562	98	<.0005*
7. DBs undermine patient confidence making patients less likely to ask questions	1 (1.0)	2 (2.0)	6 (6.1)	12 (12.1)	45 (45.5)	33 (33.3)	99	4.99 (1.025)	14.461	98	<.0005*
8. DBs leads to compromised patient satisfaction	2 (2.0)	0 (0.0)	5 (5.1)	11 (11.2)	56 (57.1)	24 (24.5)	98	4.95 (0.946)	15.168	97	<.0005*
9. DBs leads to compromised patient safety.	2 (2.0)	3 (3.0)	9 (9.1)	20 (20.2)	38 (38.4)	27 (27.0)	99	4.72 (1.170)	10.354	98	<.0005*
10. DBs are a threat to the image of the organization	0 (0.0)	0 (0.0)	2 (2.0)	12 (12.1)	45 (45.5)	40 (40.4)	99	5.24 (0.744)	23.316	98	<.0005*
11. DBs impact negatively on organizational culture	1 (1.0)	3 (3.0)	4 (4.0)	14 (14.1)	45 (45.0)	32 (32.3)	99	4.97 (1.035)	14.134	98	<.0005*

5.6 CHAPTER SUMMARY

This chapter presented the results obtained from the quantitative strand of the study. The results of this quantitative strand have provided valuable information about DBs and their causes, which impede a safe work environment in HMP, as well as strategies to mitigate DBs in radiographers. However, this strand does not provide adequate information about environmental factors and approaches adopted by RMs in practice to mitigate these behaviours. Further investigation is required using the qualitative approach. The opinions of RMs are invaluable as they deal with these behaviours in their respective departments on a regular basis. The next chapter presents the experiences of RMs in HMP and their opinions with regard to these behaviours. From both their experiences and opinions, practical strategies that are tailored to radiography settings can be established.

CHAPTER 6: PRESENTATION AND INTERPRETATION OF FINDINGS IN THE QUALITATIVE PHASE

6.1 INTRODUCTION

This chapter is the second of the three findings chapters and presents the findings of the qualitative strand of the study. The findings were structured according to the themes and sub-themes derived from the objectives and research questions presented in Chapter 1. The research questions set up in Chapter 1 are as follows:

- *What are the environmental and cultural factors that provoke DBs involving radiographers at central hospitals in HMP?*
- *Which strategies can be used to mitigate DBs involving radiographers in central hospitals in HMP?*

Sample demographics that comprise age, gender, managerial position, experience and educational level of the participants are presented first. Then, the analysis of the in-depth interview data obtained from eleven RMs at central hospitals in HMP is presented. Tesch's method of qualitative analysis was used to gain access to the RMs' experiences, opinions, beliefs, feelings and judgments of DBs in their respective departments. Processes used to analyse transcripts from the interviews to unearth codes and themes were already described in detail in Chapter 4. The perspectives of the managers were critical in this study's quest to answer the research questions and hence formulate a mitigatory framework that focuses on leadership. The chapter ends with a summary that sums up the key findings of the analysis.

A greater proportion of this chapter is made up of quotes, intertwined with the analytical comments, as evidence that the interpretation is rooted in the data. Furthermore, the quotations enhance the "realism" of the theme passages and provide the reader with details on how the participants talked about the theme

(Creswell 2016: 378). In the quotations, a sequence of dots (...) indicates where editing has been done to remove less relevant information.

6.2 DESCRIPTION OF PARTICIPANTS IN THE STUDY

Eleven RMs from the five central hospital radiography departments in HMP were interviewed for this study in the month of February 2021. The mean duration of the interviews was 40 minutes ($SD = 5.5$). Table 6.1 below indicates the participant demographics that represent the minimum requirements sought as described in Chapter 4. At least three RMs were drawn from each individual hospital. Five RMs were drawn from Hospital A, which has three Radiography departments. Two RMs were drawn from the imaging department, two from the radiotherapy department and another from the Nuclear Medicine department. Three RMs were from Hospital B and three from Hospital C. Seven participants were male, while four were females. The majority of the participants were in the 31-40 year old range (eight), while two were above 40 and only one was in the 21-30 range. The work experience in years varied amongst the participants sampled. Those participants with over 20 years of experience represented 10% of the sample size. Those participants with 11-20 years represented 60%, while those with 10 years and below represented 30% of the sample size. Seven RMs had reached Masters level and four Bachelors, while only one had a Diploma.

Table 6.1: Demographics of RMs in HMP

Participant (P#) Number	Gender		Age (Years)			Educational level			Position			Work experience (Years)		
	M	F	21-30	31-40	>40	Dip.	BSc.	MSc.	Principal Radiographer (PR)	Ass. Chief Radiographer (ACR)	Chief Radiographer (CR)	<10	11-20	>20
1	X			X				X	X				X	
2		X		X			X		X				X	
3	X			X				X			X	X		
4	X			X			X			X			X	
5	X		X				X		X			X		
6		X		X				X	X				X	
7		X			X	X					X			X
8		X			X			X		X			X	
9	X			X				X			X		X	
10	X			X			X				X	X		
11	X			X				X			X	X		

6.3 THEMES AND SUB-THEMES RELATING TO ENVIRONMENTAL AND CULTURAL FACTORS TO MITIGATE DBs IN HMP

This section reports on two overarching themes, six sub-themes and 23 categories that emerged from the interview data. The themes, sub-themes and categories identified are closely related to each other. From the experiences of RMs regarding DBs in their respective departments, environmental and cultural factors were discussed during the interviews. Furthermore, tailor-made strategies to mitigate DBs will be developed from the experiences and the opinions of RMs. The first three sub-themes are related to the first overarching theme, i.e. environmental and cultural factors, while the last three are related to the second, i.e. strategies to mitigate DBs.

The six sub-themes are:

- Power hierarchy;
- Reporting framework;
- Work environment;
- Willingness to address DBs;
- Awareness of DBs; and
- Conflict resolution.

A more detailed illustration of the relationship between the themes and sub-themes is shown below (Figure 6.1). In particular, the first sub-theme, power hierarchy, allowed the researcher to identify how behavioural and psychological dynamics can affect the way people interact in a work setting. This interaction is however crucial in work settings where safety is critical, i.e. radiation safety in this case. Safe work operations exceed technical improvements, safety protocols and standard operating procedures, but must also include the psychological environment. Furthermore, the sub-theme also allowed the researcher to appreciate that confidence in leadership can have a profound impact on safety behaviours in the workplace.

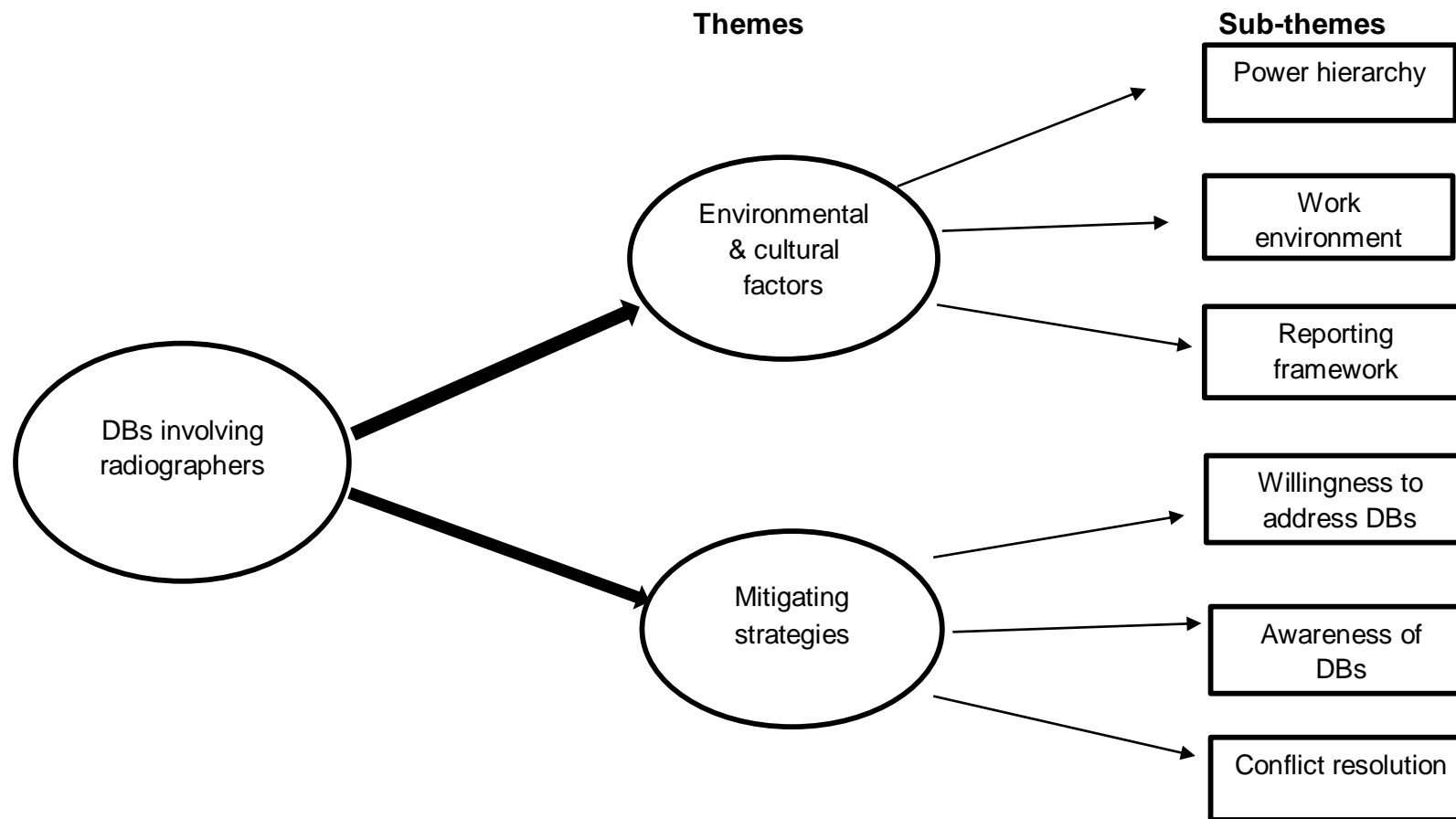


Figure 6.1: Illustration of themes and sub-themes

Table 6.2: Summary of the emerged themes and sub-themes

Themes	Sub-themes	Category	Representative Quote
1. Environmental and cultural factors	1.1 Power hierarchy.	<ul style="list-style-type: none"> i. Superiority ii. Professional boundaries iii. Representation iv. Personalities 	<i>"...because the radiologist thinks he is up there and considers themselves more superior than the radiographer so they think they can just do what they want and what they wish despite that the radiographer is also trained to do their job." (P#8; Female; ACR).</i>
	1.2 Work environment.	<ul style="list-style-type: none"> i. Trust in leadership ii. Equality iii. Burnout and fatigue iv. Remuneration v. Career progression vi. Psychological evaluations 	<i>"The inadequate equipment and high volumes of patient's leads to burnout and fatigue on the part of the radiographers. This triggers DBs." (P#1; Male; PR).</i>
	1.3 Reporting Framework.	<ul style="list-style-type: none"> i. Lack of protocol ii. Reporting culture 	<i>"...It is more like you get abused, maybe on night duty alone but there is no laid down protocol for you to report. So, you will have to deal with the abuse on your own because there is no laid down protocol that allows you to have the issue addressed." (P#1; Male; PR)</i>
2. Strategies to mitigate DBs	2.1 Awareness of DBs.	<ul style="list-style-type: none"> i. Documentation ii. Education and training iii. Emotional intelligence 	<i>"These behaviours are very common and from a policy point of view, I believe that we need to document them so that we determine the prevalent ones so we find specific measures to address them. DBs in my opinion can only be adequately addressed if they are documented." (P#2; Female; PR).</i>
	2.2 Willingness to address DBs.	<ul style="list-style-type: none"> i. Communication ii. Taking charge iii. Confidence 	<i>"So, I think there should a holistic approach and deliberate attempt from top management to deal with these behaviours." (P10; Male; CR).</i>

	2.3 Conflict resolution	<ul style="list-style-type: none"> i. Listen and understand ii. Substitution iii. External remedies 	<p><i>“They are times when you have to resolve conflict, take people who are not working together well. Sit down with them and talk to them and make them understand why they are there and how a toxic work environment can affect the overall performance of the organisation. And when you resolve that conflict you realize that it won’t happen again” (P#10; Male; CR).</i></p>
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6.3.1 ENVIRONMENTAL AND CULTURAL FACTORS TO MITIGATE DBs AT CENTRAL HOSPITALS IN HMP

This theme relates to the environmental and cultural factors specific to HMP that must be considered when formulating strategies to mitigate DBs involving radiographers. It includes the sub-themes of power hierarchy, work environment and reporting framework.

6.3.1.1 Power hierarchy

This sub-theme encompasses concepts such as superiority, professional boundaries, representation and personalities. It centres on the idea of levels of power within interpersonal interactions. In radiography, those hierarchies present themselves in many different areas. Radiographers perceived a hierarchy between different types of clinicians, such as doctors, nurses and themselves. The radiographers also perceived a hierarchy between radiographers who are on different professional ladders due to experience, age or management position. Power hierarchies were also noted between radiographers and their patients and family caregivers. There was a link between observed power and the exhibition of DBs.

Categories included:

(i) Superiority

Superiority is the umbrella term used in this study to describe the thought that one person is better than another. In this case, an example would be a doctor thinking that they are better than a radiographer, or a radiographer thinking they are better than the patient, or vice versa. The majority of RMs brought up the issue and it was referred to 21 times in the interview transcripts. RMs at central hospitals in HMP have the perception that doctors think they are superior to radiographers and other healthcare workers, as demonstrated by the following excerpts:

“.... because the radiologist thinks he is up there and considers him/herself more superior than the radiographer, so they think they can just do what they want and what they wish despite that the radiographer is also trained to do their job.” (P#8; Female; ACR).

“.... the mind-set that the doctor thinks, s/he is in charge of the radiographer, that’s where conflict is emanating from.” (P#7; Female; CR).

“I think the hierarchy of the hospital, has a bearing on how some health care workers behave. I think the system is biased, causing some health workers to feel they are superior to others ...” (P#2; Female; PR).

Besides the perception by RMs that doctors feel that they are superior to radiographers, the organisational culture seems to perpetuate it, as noted below:

“.... the hospital is run by doctors, if you encounter an abuse in the hands of a doctor, your case is likely not going to be handled fairly because the doctors are going to protect their own...” (P#1; Male; PR).

“.... there is always a feeling that one is more superior to the other, especially doctors, for example in this department it has always been a doctor who is the department chair. Then from the doctor, we have a chief radiographer...” (P#7; Female; CR).

“.... the radiologist said to me, you cannot solve this issue because my level and your level are not the same. So, it’s a bit complex to solve those issues because it’s a culture that was ingrained in people before we even joined the organisation...” (P#10; Male; CR).

Participant number ten goes on to say:

“.... if you get in the way of the specialist you as a radiographer are supposed to give in. So, in terms of confrontational issues with specialists, the organisation usually just says for the sake of progress and for the sake of business just relax...” (P#10; Male; CR).

However, these power hierarchies may also be perceived between the patient and the radiographer and between the radiographers themselves, as stated above. The following quotes affirm this:

“.... a patient just comes or walks in and feel they are superior and they are supposed to be given preferential treatment because of their language, job or status...” (P#11; Male; CR).

“.... it's just a matter of superiority that I have noticed...you know. The seniors think they can bully the juniors and it carries on like that...” (P#8; Female; ACR).

Another RM bemoaned the cultural practices of Zimbabweans in general and how they can influence the behaviour of radiographers when they spill into the workplace, as indicated in the quotation below:

“..... we are mentored to respect our elders, regardless of, you do not question them or their behaviour. So even when you go onto the workplace and you know what you are supposed to be doing but if the elder wants you to do it that way then you will just have to abide even if it's not the correct thing to do...” (P#8; Female; ACR).

Gender hegemony that is within the culture can also be a factor in the exhibition of DBs as discussed by one RM, as shown below:

“.... we also have another one, where those that are senior, especially male figures, which abuse female figures. You find that they come to their office and be passing on comments you know that are sexually-oriented...” (P#11; Male; CR).

(ii) *Professional boundaries*

Six RMs referred to this category and it had 11 references. The RMs talk about the excessive interference that radiographers get from other healthcare professionals when doing their jobs. They further reiterate the lack of understanding of the role played by other healthcare workers in teams. The excerpt below confirms this:

“.... it’s important that we respect professional boundaries because every profession is guided by its own code of ethics and practices. It will be ideal if every health worker comes in and understands that we are working as a team and not feel that I am being undermined because someone has not responded in an appropriate manner....” (P#2; Female; PR).

Another RM described incidents that she has witnessed where a radiographer acted after receiving what he deemed to be excessive interference from a doctor. The following quote vividly captures this:

“.... we are dealing with one patient the four of us. On the same patient, we have a radiographer, there is a nurse, and there is a physicist and a doctor. Each and every person just has to do his/her own part on the patient and not interfere with what the other professional does. But you find that, sorry I might be biased towards radiographers.... you find that doctors tend to want to control directly what the radiographer does. And that way, I have witnessed more than once incident where, the radiographer has moved out of the treatment room and leaving the doctor behind saying “go ahead and do everything if you think you know it all....” (P#7; Female; CR).

On the contrary, another manager believes that radiographers are also the culprits when it comes to disrespecting professional boundaries. The excerpt below confirms this:

“.... professional boundaries are where the most conflicts come from. In most cases, it is the radiographer encroaching into the radiologist’s space. Why? I think as a profession we are also developing....” (P#10; Male; CR).

RM 2 emphasizes the importance of inter-professional collaboration in the healthcare team:

“.... I believe, that inter professional collaboration is important. It’s important that we respect professional boundaries....” (P#2; Female; PR).

(iii) Representation

Other RMs discussed the importance of the representation of radiographers both in terms of numbers and contributing to the affairs of running healthcare institutions as a major factor in which they are treated and perceived by other healthcare workers. This is noted in the quotations below:

“.... one important thing is the proportion of radiographers compared to other health care workers. For example, in this organisation, the number of radiographers in this imaging department is about 25 compared to 2000 nurses and 900 doctors. So, concerns will be louder coming from professions that have the majority.” (P#2; Female; PR).

“Radiographers are a minority and most at times they are forgotten” (P#3; Male; CR).

When asked about what he thought the organisation should do to better equip him to deal with DBs, one RM cited the issue of representation as key, as captured below:

“.... another is having other healthcare workers (besides doctors) occupying senior positions in management. So that there is representation...” (P#1; Male; PR).

(iv) *Personalities*

Five RMs mentioned different personalities as a factor worth considering when talking about DBs involving radiographers. Different personalities can actually cause some individuals to be disruptive compared to others, as noted in the participants' views below:

"But ideally, when we look at these cases we need to look at them from an individual basis, don't blanket everyone because they are a Shona speaking person or maybe they are from Matabeleland or they are from this institution. Things happen and we will meet different characters." (P#11; Male; CR).

"The other thing is personalities among radiographers. Of course, there are one or two bad apples it's normal, you can't dispute that....." (P#2; Female; PR).

"Of course, in a group, you will find one who is focused and another who is deviant" (P#7; Female; CR).

"Between radiographer and radiographer, I have noticed they occur when one thinks they know it all and they don't want to take heed of what anyone else is suggesting." (P#8; Female; ACR).

"I do recall, there was an incident with one senior radiographer, who tended to throw tantrums even when she is supervising students. Even staff when you rubbed her the wrong way she became very angry, so yeah. I remember that one. This senior radiographer wanted things to be done in a certain way, and I think naturally she was short-tempered." (P#9; Male; CR).

6.3.1.2 Work environment

This sub-theme refers to the surrounding conditions in which a radiographer operates. The radiography work environment is composed of physical conditions, such as X-ray equipment and work processes or procedures. The working environment also includes the psychological aspects of how the

radiographer's work is organised and their wellbeing at work. This sub-theme contains the most categories (six), which include trust in leadership, equality, burnout and fatigue, remuneration, career progression and psychological evaluations.

(i) *Trust in leadership*

All RMs talked about this being a factor and it has also been referenced 39 times across all the interview transcripts. Trust in this study means that radiographers expect their leaders to treat them well and, as a result, are comfortable being open with their leaders. Trust is the glue that binds the leader to her/his subordinates and provides the capacity for organizational and leadership success. The foundation of a healthy work environment is created by organizational integrity, respect and equality, which form the foundation of trust. RMs believe that radiographers in HMP do not trust that the organisations will protect them in cases where they encounter DBs. This is exemplified by these two quotes below:

"In the case where I do not succeed, I may have to take it up to my superiors. But still you always get the feeling that there will not be a remedy for the unacceptable behaviour that has been shown." (P#1; Male; PR).

"There is a point where we ended up in the admin when there was a conflict between a physicist and the doctors. There wasn't much that was done from the administration." (P#7; Female; CR).

Other managers believe that there is inaction from the organisations, especially if it is one of the dominant professions that is being disruptive. Two disparaging comments were:

"Like I initially said that the hospital is run by doctors, if you encounter an abuse in the hands of a doctor, your case is likely not going to be handled fairly because the doctors are going to protect their own." (P#1; Male; PR).

“.... it’s difficult to address these kinds of issues and you know especially these Radiologists are treated with soft hands. They in “brackets” treated as specialists. If you get in the way of the specialist you as a radiographer are supposed to give in. So, in terms of confrontational issues to address that issue, it seems like the organisation will just say, for the sake of progress and for the sake of business just relax.” (P#10; Male; CR).

Furthermore, RMs have the perception that the organisations are quicker to act if a patient reports abuse at the hands of the radiographer or any other healthcare worker than if it is the other way around. They believe that the bias of administration towards patients could affect the reporting rate of DBs by radiographers, as noted in the excerpts below:

“.... we always say the patient is right and as a result, I think the protocol favours the patient more than the health care worker. I have noticed that many times radiographers will not make complaints about DBs suffered at the hands of patients because they feel the system is biased towards the patient. They may talk about it to colleagues but never report the incidents formally. If it’s not reported then the cases are swept under the carpet, without justice being done. So, a radiographer may feel that they have been aggrieved but justice was not done. Some may actually cope by misdirecting the anger to a colleague or another patient. For patients, Public relations is more open to them. The patients are given the leeway to say they can always report any abuse that they suffer from health workers. While it is a good thing because we are here for the patient, it makes it difficult for health care personnel to make formal complaints. Health workers feel that they are not protected by the system against patients that abuse them.” (P#2; Female; PR).

“.... with professionals there are fewer reports. The general feeling is that admin entertain complaints from the patient than the staff. Like I told you that the conflict between physicist and doctor, nothing was done. It was thrown back to the department. They didn’t solve anything. But if it’s a patient they will come

down and talk about it and try to find ways to solve the problem.” (P#7; Female; CR).

However, another manager is of the opinion that the reason why managers at central hospitals cannot effectively deal with the problem of DBs is that they have no full control of the hospitals due to the centralised nature of the Zimbabwean healthcare system. The following excerpt affirms this:

“There are no effective mechanisms to deal with DBs in this hospital because it’s a bigger problem. For example, hospital management cannot solve issues to do with understaffing because the Ministry of Health has frozen the recruitment of health workers in public service. The only thing that they can do is to probably comfort you.” (P#3; Male; CR).

Despite all this, leadership should find ways to protect and keep their staff happy. A contented radiographer will treat patients in the best way possible. Treating both co-workers and patients with respect fosters a healthy workplace environment and more satisfied patients. The participant’s view below confirms this:

“.... the hospital needs to protect their personnel. In some circles, they say the customer is king but I actually believe customer is king is something that flies in the marketing world.... someone gets, or I can say whatever the patient does you are at their mercy which I don’t think it’s the right way to approach. My approach is that the best stakeholder is the person interfacing with the client in this case the patient. That person should be the most valuable because in that person is not happy that will trickle into the attitude in which they will treat their patient.” (P#9; Male; CR).

The majority of RMs believe that leaders should be exemplary in the way they interface with colleagues, patients and the general public. Radiography leaders should also lead by example, especially when it comes to patient safety issues

as the subordinates will usually learn by copying, as expressed by the participants below:

“.... being in a senior position all junior staff and subordinates look up to you, and they will look at your behaviour. The way you treat them and others, and the way you operate in terms of adherence to radiation safety protocols laid down in the department. The subordinates do not just listen to you but they copy what you do. It is more like you are the standard for them.” (P#1; Male; PR).

“.... because people do not learn from just being told but from also copying what a person in a position of influence is doing. What is essential to us as leaders is do we “walk the talk.” (P#2; Female; PR).

“.... subordinates learn from the departmental culture by copying and watching leaders.” (P#3; Male; CR).

“As a leader what you reflect when you attending the patient is important as everyone will be watching what you are doing. So, your subordinates are going to follow the way you treat your patients. It’s like the way you handle patients, the way you communicate with your subordinate also reflects on the rest of the team.” (P#10; Male; CR).

“So, when I tell them that the hospital has paid \$500 000 for your safety, please wear these TLDs. But if you don’t do it, they will say the role model doesn’t care so why should we care.” (P#4; Male; ACR).

“My performance has a great influence on those that I lead. They will tend to follow what I do.” (P#7; Female; CR).

“.... as a leader, you should lead by example. The example that you set is basically what people will follow. Whether during your absence or presence.” (P#8; Female; ACR).

(ii) *Equality*

Equality in the treatment of patients in one hospital department may lead to conflicts between radiographers and patients. In this department, physicians are allowed to bring in their private patients. However, public patients perceive a disparity in handling between them and the “elite” private patients. The following quotes illustrate this:

“... in this government institution, we treat both public and private patients. Maybe the private patients are elite they will be seen discussing with the radiographer and asking more about their treatment, then the government patient will think there is a favour going on. That way, that’s when you find complaints from the patients. So that when you find that conflicts my start between government patients and the radiographer. The government patient may think that the private patient is being preferred over them.” (P#7; Female; CR).

“... if someone is a private patient, they belong to someone and that someone is responsible for them. So that is why maybe their issues go smoothly than for public patients. I think mainly our issues surround that private-public, which is, mixing private and public patients on one facility. I think that’s were conflicts with patients come from. The problem is mixing the private and public patients at the same time at the same facility.” (P#6; Female; PR).

Inequality may also be perceived between radiographers, or between the radiography department and other departments. The following excerpts demonstrate this:

“Radiographer to radiographer yeaah! People tend to just, because of little favours that others get in preference to others, maybe by other colleagues. For example, they would prefer to work with someone instead of someone. For example, giving the incentives and stuff so that creates tension amongst the radiographers.” (P#6; Female; PR).

RM 6 continues to share this:

“The preference shown to another colleague, for example, the colleague that is left out may feel demotivated. They feel like uh, they are not good enough, it will destroy their morale, and it will kill their spirit.” (P#6; Female; PR).

“I think the organizational culture here tends to favours some departments over others. Certain departments are engaged more compared to other departments.” (P#3; Male; CR).

The same manager goes on to say the following involving the Radiography department:

“.... you find that an issue may be about the radiology department but you find that decisions will be made by nursing staff or hospital equipment technicians. There are certain cultural behaviours that occur, whereby there seems to be some side-lining of some departments on issues that concern them. Of course, these cultures have emanated because the radiology department has always been understaffed.” (P#3; Male; CR).

Nevertheless, another manager is of the opinion that a leader should avoid favouritism in the workplace so that a healthy work environment is fostered. This is exemplified by the following quote:

“As a leader, you should make sure that all radiographers are treated equally. There should be some equality in treatment and opportunities to the rest of the staff.” (P#6; Female; PR).

(iii) Burnout and fatigue

A number of incidents of DBs occur when radiographers have been overworked. During these times, patients often had to wait for a longer time to receive service, so their disease symptoms might have gotten worse. The main

reasons for radiographer work overloads included understaffing and high volumes of patients. The following quotes illustrate this:

“The inadequate equipment and high volumes of patient’s leads to burnout and fatigue on the part of the radiographers. The result is disruptive behaviours.” (P#1; Male; PR).

“..... understaffing does trigger DBs that are displayed by health care workers because it puts people under a lot of pressure. Understaffing leads to long waiting periods for patients causing them to become anxious and, in the end, they may end up abusing the radiographer and complaints start to come in.” (P#3; Male; CR).

“.... in terms of workload. If the radiographer is overwhelmed we are going to have challenges in the way they relate with patients.” (P#11; Male; CR).

“I think when the casualty is overwhelmed there is a breakdown of communication with the radiography department leading to conflict between casualty and the radiography department.” (P#2; Female; PR).

(iv) Remuneration

This has to do with the salary and incentives at work. Ten RMs believe that most of the DBs exhibited by healthcare workers, including radiographers, are triggered by frustrations due to the low salaries received. Low remuneration can have devastating effects on healthcare workers in terms of anger, disappointment, low morale and stress. Their workplace relationships can suffer, mainly the professional relationships they have with other colleagues. Patient care and safety may also be affected, as supported by the excerpts below:

“To see that they are well remunerated and everyone is happy so that they render good service. I can surely tell you that people who are not happy ...in

terms of their fuse it is short.... they are very quick to get ignited.” (P#9; Male; CR).

“In our case, I believe this issue of low remuneration leads to behaviours by radiographers that are not consistent with optimum operations and patient safety.” (P#1; Male; PR).

“So, I think that lack of incentives is the one that impacts on the performance of radiographers. And even the concentration on the tasks at hand is diminished because of stress associated with trying to survive.” (P#3; Male; CR).

“And there is the issue of remuneration. This will affect the motivation of people when actually come to work.” (P#5; Male; PR).

“Hhahahahaha! Low remuneration; the salaries are poor compared to what we used to get. The salaries are just too low. People will be just saying this is not worth it. People are no longer putting their maximum concentration or effort.” (P#7; Female; CR).

“.... when we look at remuneration, there isn’t much or there is none, so that as well. I don’t know whether it is ok for me to be saying this but you take a radiographer from this department and put that radiographer in a department in Ireland, she will perform much much..... Ten times better than what they will do here. Nothing will have changed but only the environment and of course remuneration.” (P#7; Female; CR).

“Remuneration plays a very big part in anyone’s work, their state of mind on the job.” (P#8; Female; ACR).

Despite the majority of RMs believing that remuneration has a major impact on the behaviour of radiographers and healthcare workers, RM 10 is quick to say that low remuneration should not be an excuse for radiographers not to relate

and work with patients and other healthcare workers well. The excerpt below illustrates this:

“.... yeah but you know what as a radiographer ...you are a qualified radiographer that’s your responsibility whether you are paid or not. It shouldn’t be a big issue. Because you can’t say I am not going to make sure these patients are not protected because I am not paid. Ethically, it is not right.” (P#10; Male; CR).

(v) Career progression

When radiographers are offered career progression opportunities, it makes them feel like they are growing with the establishment and provides a sense of purpose, which in turn fosters loyalty to the healthcare team and to the organisation. Loyal employees may treat others in an appropriate manner, avoiding conflict because they feel that they are there to stay. However, radiographers at central hospitals in HMP bemoan the lack of career progression as one of the factors leading to inappropriate behaviour in healthcare teams. The following quotes below highlight this:

“When you start working you look forward to upgrading yourself.... hmmm in this department, you look at the chief and say when they will leave the office so that I may also enter. There isn’t much in terms of career progression.” (P#7; Female; CR)

“The government no longer has money to send people abroad for training. But we need further training to enhance the knowledge of the staff.” (P#4; Male; ACR).

(vi) Psychological evaluations

The concern shown by the organisation towards employees can encourage workers to treat each other and patients in an appropriate manner. An example is periodic psychological evaluations and taking the time to find out what is bothering the workers. The quote below illustrates this:

“At least periodical psychological evaluations asking...are you happy at work? Is there anything that is bothering you at home or anywhere? You just find ways to find out more about the employees and also so that they understand themselves.” (P#9; Male; CR).

6.3.1.3 Reporting framework

The lack of a deliberate, specific and clear protocol that allows radiographers to report in confidence has been noted by the majority of managers as a factor that may affect the reporting rate of DBs by radiographers. This sub-theme comprises the concepts of a lack of protocol and the reporting culture of radiographers.

(i) Lack of protocol

Most RMs believe that in order for the DBs to be effectively mitigated, organisations need to have a written down protocol that is specific. The protocol is not only supposed to be specific, but it also needs to be clearly communicated to everyone in the organisation. The following quotes exemplify this:

“I personally think that for these behaviours to be properly managed we need a formal protocol in black and white. The protocol should be easy and specific. It should be communicated to everyone.” (P#1; Male; PR).

“And we should draw clear lines of reporting. So that they would know when they come across this type of behaviour and whom they report to.” (P#8; Female; ACR).

“So, you need to come up with a departmental protocol or an algorithm where we can grade the sought of behaviour that’s being executed in the particular situation where if its manageable someone may be asked to move out of the department as opposed to where you actually running for your life.” (P#10; Male; CR).

"I think lack of written protocols, lack of organograms as to let people know what they are supposed to do and how they are supposed to do it. And the issue of reporting mechanisms, who people are supposed to report to and how." (P#8; Female; ACR).

Another RM is of the opinion that it is the role of the Radiography Manager to be involved in canvassing the healthcare organisations, government and civic society to promulgate protocols that govern the behaviour of health workers that can negatively affect patient safety. The following quote affirms this:

"The first role of course is policy, you must have the policy to guard against these DBs. So, you should influence the government, you should influence the employers and all these other leaders that we should have a policy that governs the conduct of workers. Remember the last time we pushed for a code of conduct where issues like social media bullying were addressed. So those are the things we can do as leaders to push agenda setting, lobby the government and lobby civic societies to address such challenges." (P#11; Male; CR).

However, sometimes even if the protocol is available in black and white, people do not fully utilize it. The quote below exemplifies this:

".... as long as in the department there are protocols and people follow those protocols that can solve a lot of issues. But the truth is sometimes we just don't follow protocols." (P#7; Female; CR).

Furthermore, there is a feeling by other RMs that even if a written down protocol is available, it may not be effective in addressing these DBs. The following excerpts demonstrate this:

"Currently, uuuuuuh, the hospital does not have effective mechanisms to deal with disruptive behaviour." (P#3; Male; CR).

“Well, they are not very effective, in the sense that, for example, the example I was giving about on-call.... the radiographer will report to the casualty matron, usually, they are the ones who bring complaints against radiographers.” (P#5; Male; PR).

“.... so. I wouldn’t say there is an effective mechanism to deal with these behaviours.” (P#7; Female; CR).

(ii) Reporting culture

RMs believe that most radiographers do not formally report the DBs they encounter in their workplaces. The majority of the incidents are talked about casually with colleagues, such as during tea breaks. This gives a false impression that these behaviours are not prevalent, yet it is just the low reporting rate. The following quote affirms this:

“People generally talk about the abuse in their small circles and it ends there. And if you ask if they reported they tell you “no”. This gives the impression that such behaviours are not happening yet it’s just the low reporting rate” (P#2; Female; PR).

Most radiographers take the incidents as part of the job. Radiographers internalize the abuse and carry on as if everything is normal. The following excerpt illustrates this:

“Not at all, employees they just carry on because it just sounds like, it has not really been questioned as to be a matter of concern, and it’s just like the norm. So, people come in and do this and people carry on with their business. These behaviours are taken as part of the job, it’s not an issue. You internalize it and probably talk about it in the tea room and that’s all” (P#8; Female; ACR).

6.3.2 STRATEGIES FOR MITIGATING DBS IN HMP

This theme relates to the experiences of RMs and the strategies they have adopted to mitigate DBs in their respective departments. Furthermore, their opinions and feelings about these behaviours are highlighted so that effective solutions to deal with these behaviours can be established. It comprises three sub-themes, namely awareness of DBs, willingness to address DBs and conflict resolution.

6.3.2.1 Awareness of DBs

This sub-theme centres on the radiographer's consciousness of DBs and their consequences for patient care and radiation safety. It includes the categories of documentation, education/training and emotional intelligence.

(i) Documentation

For DBs to be effectively mitigated, they should be recorded so that specific measures to address them are formulated, as explained by one of the participants below:

"These behaviours, are very common and from a policy point of view I believe that we need to document them so that we determine the prevalent ones and find specific measures to address them." (P#2; Female; PR).

After the cases have been documented, the majority of RMs suggest that the education and training of radiographers is important so that they are conscientized about the impact of these behaviours on patient safety. However, one particular manager advocates for the academic curriculum to emphasize radiographer interactions with other healthcare workers and patients, as noted below:

".... I think the part on psychology and patient management should emphasize a lot the interaction between other health care worker and patients. There

should be an emphasis on the psychology of the workplace as well.” (P#2; Female; PR).

(ii) Education and training

Most managers agree that for them to effectively deal with DBs in their respective departments, they need extra training in human resources. The Radiography course focuses more on technical proficiency, but the humanistic aspect is usually ignored. The following quotes prove this:

“I think first thing is, I am a radiographer, I have technical expertise, I might need an extra qualification that has to do with dealing with these behaviours or on human resources.” (P#7; Female; CR).

“The tendency is for students to focus more on technical proficiency, understandably so because that’s the area that they are going to be assessed on. Students then take the psychological and behavioural environment for granted. The truth is radiography is more than technical proficiency as you have to deal with other health care professionals and erratic patients.” (P#2; Female; PR).

“I would think if the hospital wants these things to be handled the right way, the managers should have some specific training in dealing with DBs.” (P#3; Male; CR).

“Those people who assume leadership roles should be trained on issues to do with human resources because we do not do those courses at school and one day you just become the chief radiographer, so sometimes you might not know how to handle or deal with those incidents. Sometimes you may not even know things that affect your subordinates. I think people need to be trained.” (P#6; Female; PR).

“The organization should start by training the leader to know more about these DBs and then also giving the leader enough leeway to be able to manage these behaviours when a report has been made.” (P#8; Female; ACR).

“Sometimes we are taught to do clinical work perfectly but the way we handle people can suffer. We shouldn’t think that it’s all about producing a beautiful radiograph and then forget about the other component about how to handle subordinates.” (P#11; Male; CR).

One particular manager, when asked what they wanted the organisation to do for them to effectively deal with DBs, quickly stated that he wanted to be given power. That power would come through education or the acquisition of knowledge, as captured by the quote below:

“A leader must have power. Power comes in different forms. Knowledge is power, so I think they should invest in making me knowledgeable. I have to go to school and acquire these leadership qualities. So, if you have that knowledge it’s easier to deal with any challenges that may come.” (P#11; Male; CR).

Training should not be just limited to RMs, but radiographers and other health care professionals should be conscientized and trained on DBs and their consequences for the work environment. This is supported by the participants’ views outlined below:

“.... in our CPD meetings, we are focusing more on our technical expertise and ignoring the socio-psychological issues. Emphasis should be put on how radiographers should conduct themselves in a health care team.” (P#2; Female; PR).

“On the part of managing DBs, I cited inter professional conflicts. I think the organisation should have workshops and seminars which involve different professions.” (P#3; Male; CR).

“.... people need to be sensitized to things that may affect them in carrying out their duties. Or maybe to circumstances that they may encounter. Because sometimes you may encounter it but you are not aware that this is the thing. So maybe if these things are talked about people can be alert to identify that they are being abused.” (P#6; Female; PR).

“Firstly, we need to talk about it, and conscientize people and make them aware that it is an issue of concern.” (P#8; Female; ACR).

Those employees that are joining the organization should be inducted and made aware of these behaviours. Understanding that the organisation has zero-tolerance for these behaviours by new employees helps foster a sense of responsibility. The quote below exemplifies this:

“They have got induction and training, aah after some time people go for training in different aspects.” (P#4; Male; ACR).

(iii) Emotional intelligence

Radiographers and other healthcare workers need to develop emotional intelligence so that they can comprehend, use and manage their own emotions in positive ways to relieve stress, communicate effectively, empathize with others, overcome challenges and neutralize conflict in the workplace. This was expressed by one of the participants, as indicated below:

“.... it takes us to the point of emotional intelligence. You need to understand why a certain problem has occurred, maybe that person has got a genuine problem, and maybe that person just wants to be difficult.” (P#4; Male; ACR).

The same manager goes on to say:

“The development of emotional intelligence, amongst your staff, is an important aspect even at home, people need to feel for each other. Empathy towards the

patient, empathy towards other people and appreciate their existence.” (P#4; Male; ACR).

6.3.2.2 Willingness to address DBs

Willingness centres on the state of readiness to deliberately tackle the problem of DBs involving radiographers in HMP. It includes the categories of communication, taking charge and confidence.

(i) Communication

Proper communication was identified as one of the factors that can be used to mitigate DBs involving radiographers. The majority of RMs commented that radiographers, doctors, nurses and patients must communicate efficiently and sufficiently with each other in order to avoid barriers that would be created by mis-communication, leading to conflict. This is noted in the quotations below:

“.... the cause of these DBs is a result of poor communication. Sometimes just having professional to professional interaction with the patient out of the picture can help in easing tension between doctor and radiographer.” (P#2; Female; PR).

“I think communication is one of those areas that need to be worked on a periodic basis. For example, we should have refresher courses on communication because it solves a lot of these problems.” (P#11; Male; CR).

“Basically, mitigation can be the same maybe at individual or at a higher level. All you need is communication with proper feedbacks.” (P#4; Male; ACR).

“As a hospital, there should be improved inter-professional communication. Having frequent meetings with both management.” (P#1; Male; PR).

“Number one let’s try to improve communication. As a leader you must be able to communicate effectively to your subordinates and even to your superiors and even to colleagues, inter professional communication.” (P#9; Male; CR).

Other RMs state that improved communication with patients in terms of regularly updating them about their waiting times, or in cases of emergencies that are going to need prompt attendance, will avoid patients showing DBs. The excerpts below attest to this:

“Communication for example is a good thing. You have a whole bench full of patients; just spare a moment to talk to themcommunicate with them. Let them know that you are overwhelmed. They should know that you are overwhelmed. Let them know that I am the only one attending to you and for a single procedure I am likely to take five minutes. So, if they are 50 of them they will know it will take an hour or so before they are attended to. So, inform them if there is a need for someone to skip the queue. Communicate with them constantly.” (P#11; Male; CR).

“Another thing that causes patients to be disruptive is the issue of emergencies that need to cut the line and be attended to fast. Because of the shortage of equipment and staff, there are always long queues. If an emergency case comes and needs to be attended to fast, some patients who have been waiting for ages may not understand the situation triggering DBs directed to radiographers.” (P#2; Female; PR).

(ii) Taking charge

Most RMs reiterated that for DBs to be mitigated, there needs to be a concerted and deliberate attempt from all the stakeholders involved, i.e. the individual radiographer, the radiography department and the organisation as a whole. The following quotes exemplify this:

“.... the individual should take charge of their health because this is a wellness issue. Their wellbeing is affected obviously, their work environment will be

affected and everything else will be affected including patient care. So the individual themselves must take it up upon themselves to seek ways you know to address such challenges.” (P#11; Male; CR).

“So, I think there should a holistic approach and deliberate attempt from top management to deal with these behaviours.” (P#10; Male; CR)

“...it’s a culture that was ingrained in people before we even joined the organisation, so for things to change it needs willingness and action from top management and cascade it down to the shop floor.” (P#10; Male; CR).

“...we have got this hierarchy like to say we have team leaders, chief radiographers, HODs and administration. I think people can have issues addressed if they are willing.” (P#6; Female; PR).

“As radiographers, we should have a reporting culture.” (P#1; Male; PR).

(iii) Confidence

Some RMs are of the idea that for radiographers to avoid abusing or being abused, they need to be confident in themselves. They need to be competent professionals and be well versed in their professional scope so that they avoid conflict by encroaching on professional boundaries. The way in which an individual radiographer carries themselves determines whether professionals respect or disrespect them. This is illustrated by the quotes below:

“Let start at a personal level, I don’t know if it’s really effective but confidence.....as a radiographer, you should be confident. You need the confidence to say I am a radiographer I was trained to do this up to this. You should know your professional scope. That’s the first thing that you need to do.” (P#10; Male; CR).

“But sometimes they do respect other professions. So, I don’t think the organisation promotes that. But maybe it is on an individual basis, how you carry yourself around....” (P#6; Female; PR).

6.3.2.3 Conflict resolution

This area is concerned with how leadership facilitates the peaceful ending of conflict and retribution with both parties being satisfied that justice has been done. It includes the following categories: listen and understand, substitution and external remedies.

(i) Listen and understand

Most RMs believe in solving conflict harmoniously within the department first before reporting to structures outside the department. Structures outside the department are only sought if a solution is not found or the DB incident escalates, as noted below:

“.... Personally, as a manager, I will try to sit down with the feuding parties and try to reach common ground. In the case where I do not succeed, I may have to take it up to my superiors...” (P#1; Male; PR).

“Radiographer to radiographer I have not experienced any DBs, generally, people I have worked with get along. If people have vendettas, they will probably solve away from the department.” (P#6; Female; PR).

“I think people try to solve these issues harmonically, without making formal reports. Maybe they try to talk about these things in a casual manner but not making those formal meetings about the issues.” (P#6; Female; PR).

“As radiographers we have a tendency of solving our own issues as practitioners. We sit down and say my friend I think you did this and it’s not okay with me without involving the management.” (P#10; Male; CR).

RMs believe that listening and understanding from both feuding parties will help in solving the conflict. A conflict solved sets a precedent and hence instils confidence in the radiographers that if an incident is reported, they will get justice. This is supported by the participants' voices outlined below:

".... they are times when you have to resolve conflict, take people who are not working together well. Sit down with them and talk to them and make them understand why they are there and how a toxic work environment can affect the overall performance of the organisation. And when you resolve that conflict you realize that it won't happen again" (P#10; Male; CR).

".... when such situations happen I first listen to my subordinate and try to understand their side of the story. After listening carefully to their story, I will look at the issue, and if I feel that my subordinate has been aggrieved, and they were not at fault I will then engage the other party that was involved in that DB so that we find a solution" (P#3; Male; CR).

Another RM suggests that despite Human Resources Management being available in the organisation, they are supposed to be well equipped to deal with incidents of DBs in their immediate workplace. The selected quote below confirms this:

".... we have the HR that deals with these behaviours but however, as a manager you are also trained to deal with behaviours in your immediate workplace" (P#4; Male; ACR).

Another RM is of the opinion that giving radiographers a platform to talk openly about their grievances and worries will help them vent their frustrations in a positive way so that they do not misdirect that anger to patients or other healthcare workers. One of the participants said:

“Giving employees the platform to talk and let out what is inside of them. It will go a long way just to preserve the mental faculties of the radiographers” (P#9; Male; CR).

With the lack of understanding of the challenges of radiography in public service, patients always have overly high expectations, especially if they have been treated in a private facility before. All these can lead to the dissatisfaction of the patients resulting in complaints and DBs directed towards radiographers, as noted below:

“Other factors are the behaviour of patients, due to their lack of understanding of the radiography department processes and procedures. Some might have been treated in the private sector where they received a quicker service but they may not understand that it may take longer in the public sector because of shortage of equipment, staff and patient volumes.” (P#3; Male; CR).

This is more common in therapy radiography where despite many professions being involved in patient treatment, the radiographer is the one who interfaces regularly with the patient. It is therefore easier for patients to vent their frustrations on radiographers. The following quote exemplifies this:

“.... because of that chain, there can be someone who is not doing their work. The patient can come a number of times and find that their treatment plan is not yet ready because someone in the chain is not doing their work. But now because they are constantly in touch with radiographers, they bring out their frustration on radiographers and think that they are the ones who are delaying the process.” (P# 6; Female; PR).

(ii) Substitution

One of the ways of mitigating the consequences of DBs is to substitute the radiographer that has been involved in a DB incident. They may be given time off to go and rest at home. Resting of the radiographers enables them to re-

compose their faculties and ensures that they perform their duties when they are in the right frame of mind. The following excerpts note this:

"I think the time off the environment where the abuse occurred can really help. The victim is supposed to be given some days off to go and recover at home in peace." (P#1; Male; PR).

"And if felt like you could not continue after being insulted, or physically abused you would be allowed to go home. Go home and take time to calm down, and when you have calmed down then you can always come back. Then we know that when you do things you are in touch." (P#9; Male; CR)

Giving the radiographers some time off may act as an incentive to encourage the reporting of such incidents, as noted below:

"As an incentive to encourage reporting we could offer off days to the victim. First we address the abuse and give some time off work." (P#1; Male; PR).

The radiographer may be moved from one department or workstation to another so that they avoid regular contact with the perpetrator if it is someone in the department. However, one manager believes that moving people away from the person is not a solution, as the problem should be dealt with head-on. The passage below demonstrates this:

"...you can clearly see that they are not tackling the issue head-on. Most of the times they just say guys please try to work together harmoniously. They will say try to understand what he wants and work around the situation so that's how these issues are dealt with in this organisation. So, I don't know if we can call it resolving the issue but it comes to a point where the radiographer will say I am not comfortable working with this guy. I don't know if we can say that a way of addressing the issue by moving one of the practitioners away from the department. I do not think it's an effective strategy, but maybe for business continuity, it is fine." (P#10; Male; CR).

(iii) External remedies

In cases where organisational remedies fail, for example in the case of very powerful specialists or if it involves very senior people in the organisation, then RMs suggest employing remedies that are from outside the organisational establishment. These may include professional boards. The excerpt below illustrates this:

“Most managers will say if I address this issue head-on...I will lose business if this guy leaves. So maybe if it gets addressed from a professional board-level...” (P# 10; Male; CR).

If the incident involves harassment from a woman's point of view, then pro women groups may be employed. The passage below affirms this:

“But the only way it can be dealt with is by seeking these pro-women organisations. You don't make it public that it was you who reported. But you do so anonymously. Then these people will just come and tell the person that, no we have reports like this.... maybe from an employee that has since resigned. So that it does not appear like it's the employee still there. At least if he is made aware that complaints are coming in, there will be that restraint on the individual.” (P#11; Male; CR).

6.4 CHAPTER SUMMARY

This chapter allowed access to the experiences, opinions, beliefs, feelings and judgments of DBs by managers in their respective departments. From their experiences, the environmental and cultural dynamics to mitigate DBs were unearthed. Furthermore, their opinions on the strategies to mitigate these behaviours were also obtained. The next chapter involves the mixing and integration of the findings from both the quantitative and qualitative strands. Integration of the two sets of findings allows the development of results and interpretations that increase understanding, that are comprehensive, authenticated and confirmed.

CHAPTER 7: MIXING AND INTEGRATION OF THE FINDINGS FROM THE QUANTITATIVE AND QUALITATIVE STRANDS

7.1 INTRODUCTION

The purpose of this chapter is to present the results of mixing and integrating the quantitative and qualitative findings of this study, as shown in Chapters 5 and 6. Particularly, the researcher sought to answer the following mixed methods question (Creswell and Plano-Clark 2018; 333):

- *To what extent do the quantitative and qualitative results converge?*

Firstly, summaries of quantitative and qualitative findings are presented respectively. The two types of data will be integrated using joint display analysis; which will be displayed in the second section of the chapter. Then there will be a discussion of the areas of confirmation, complementarity and divergence between the two data strands. A summary will conclude the chapter.

7.2 MIXED METHODS DESIGN

The aim of this study was to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. As illustrated by Figure 7.1 below, this study employed a convergent parallel mixed-methods design, i.e., quantitative and qualitative data were collected concurrently, analysed separately and then merged (Creswell and Plano Clark, 2018: 122). DB is complex, interactive, dynamic and multifactorial in nature (Walrath *et al.* 2010: 106; Cai *et al.* 2011: 2; Oliveira *et al.* 2016: 696), making the phenomenon challenging to analyse or predict. Hence, both quantitative and qualitative data had to be combined to provide the range plus depth of data necessary to answer the research questions and to enhance

rigour through methodological triangulation (Teddie and Tashakkori 2009: 32; Creswell and Plano-Clark 2018: 53).

The quantitative data collection consisted of self-administered questionnaires comprising both closed and open-ended questions that were used to gather statistical data from 100 radiographers who satisfied the inclusion criteria in HMP. On the other hand, the qualitative inquiry consisted of face-to-face, one-on-one and in-depth interviews with 11 radiography managers that were carried out in accordance with an interview guide (Appendix 14). Chapter 4 provided a more detailed description of the collection of both quantitative and qualitative data. However, in accordance with the design, the quantitative data and qualitative data were analysed separately in Chapters 5 and 6. This chapter presents the last stage of data analysis in which the quantitative data and qualitative data will be compared and contrasted through the use of a joint display. Integration of the data strands was necessary because “without integration, the knowledge yield is equivalent to that from a qualitative study and a quantitative study undertaken independently, rather than achieving a whole greater than the sum of the parts” (O’Cathain *et al.* 2010: 1). Therefore, merging both data strands facilitates the development of results and interpretations that increase understanding, are comprehensive, are authenticated and confirmed (Creswell and Plano-Clark 2018: 333).

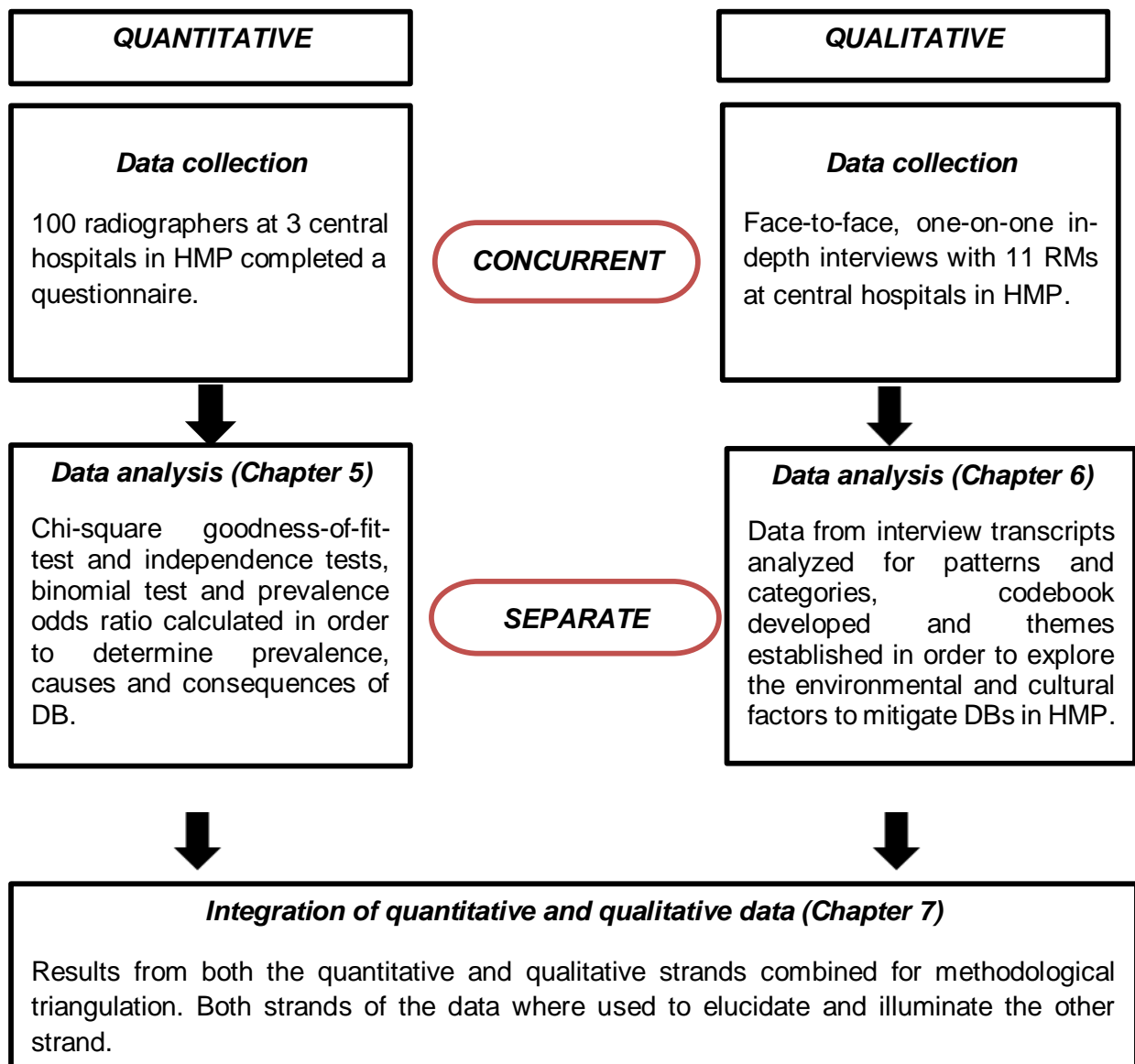


Figure 7.1: Illustration of the mixed methods design of this study

7.3 SUMMARY OF QUANTITATIVE FINDINGS

The purpose of the quantitative strand was to determine the DBs involving radiographers, their causes and consequences at central hospitals in HMP. A total of 100 radiographers that satisfied the inclusion criteria were selected to complete a questionnaire that comprised both closed and open-ended questions. The quantitative data obtained was analysed using both descriptive and inferential statistics.

The findings revealed that DBs involving radiographers in HMP are prevalent, with the majority of radiographers (61%) indicating that they had been exposed to more than one incident of DB in the past year prior to the study, ($\chi^2 (2) = 34.820, p < .0005$). A further 22% had been exposed once in the last 12 months prior to the study. The overall prevalence of DBs involving radiographers in HMP was therefore 83%. A significant 81% had been exposed to verbal abuse, ($\chi^2 (1) = 45.375, p < .0005$). A further 21% were exposed to sexual abuse, ($\chi^2 (1) = 24.045, p < .0005$). Lastly, 4% were exposed to physical abuse, ($\chi^2 (1) = 73.719, p < .0005$). A significant 69% had been abused by a family member or escort of a patient, $p = .001$. There was significant agreement that frustration due to poor working conditions, ($M = 3.93, p < .0005$) and long waiting times for patients, ($M = 3.91, p < .0005$) are the two most common triggers of DBs. Lastly, there was a significant agreement that DBs can affect the way in which radiographers implement radiation protection protocols ($M = 4.42, p < .0005$) and consequently, the safety of patients ($M = 4.72, p < .0005$).

7.4 SUMMARY OF THE QUALITATIVE FINDINGS AND EMERGENT THEMES

The purpose of the qualitative phase was to firstly explore the environmental and cultural factors to mitigate DBs involving radiographers. Secondly, it aimed to identify strategies to mitigate DBs involving radiographers in central hospitals in HMP. The qualitative data was obtained by the analysis of the in-depth interviews with 11 RMs at central hospitals in HMP. Tesch's method of qualitative analysis was used to gain access to the RMs' experiences, opinions, beliefs, feelings and judgments of DBs in their respective departments.

Two overarching themes, six sub-themes and 23 categories emerged from the qualitative data. The two themes are (i) environmental and cultural factors and (ii) tailor-made strategies to mitigate DBs. The sub-themes power hierarchy, reporting framework and work environment are related to the first overarching theme of environmental and cultural factors. On the other hand, the sub-themes

willingness to address DBs, awareness of DBs and conflict resolution are related to the second strategies to mitigate DBs.

The six sub-themes are:

- Power hierarchy;
- Reporting framework;
- Work environment;
- Willingness to address DBs;
- Awareness of DBs; and
- Conflict resolution.

Figure 6.1 and Table 6.2 in the previous chapter illustrate and give a summary of the qualitative findings and emergent themes. The study was assessed using the four criteria for developing the trustworthiness of qualitative research as postulated by Lincoln and Guba (2013: 104), namely credibility, dependability, conformability and transferability.

7.5 PROCEDURE FOR THE PRESENTATION OF MIXED METHODS RESULTS

In accordance with a convergent parallel mixed-methods design, the integration of the quantitative and qualitative data occurs as the third phase of analysis. The qualitative and quantitative methods were used to examine unique aspects of the overall research aim. Data was gathered and analysed separately for each strand to produce two sets of findings. There are however numerous techniques and procedures that may be employed by healthcare academics to integrate data or findings in their mixed methods studies (Moseholm and Feters 2018: 3). In this study, the researcher adopted a procedure that has been suggested by Creswell and Plano-Clark (2018: 335). The procedure is as follows:

- I. The results were obtained by quantitatively analysing the quantitative data and qualitatively analysing the qualitative data.
- II. The researcher then looked for mutual concepts across both sets of findings.

- III. A joint display table that arrayed the two results together was presented so that a comparison could be easily made.
- IV. The results of the tables were then compared by concepts to determine in what ways they converge, diverge or complement each other.
- V. Lastly, interpretations of how the convergence, divergence and/or complementary evidence from the integrated databases enhances an understanding of and provides insight into the research problem was advanced.

Joint display analysis was employed to present the data side-by-side for easy comparison. More healthcare scholars are including joint displays in their mixed methods studies, especially those studies that use a convergent design (Creswell and Plano-Clark 2018: 339). Carrying out joint display analysis involves openly merging the results from the two data sets through an adjacent comparison to assess for “fit” of the two types of data. The “fit” of data integration refers to the coherence of the quantitative and qualitative findings and this assessment of the fit of integration is likely to have one of three outcomes: convergence, complementarity or divergence between the datasets (Haynes-Brown and Fetters 2021: 2). Integrating by means of joint display analysis offers benefits because it forces the researcher to think concurrently about both types of data for connected concepts. Doing so can lead to new insights beyond the information gained from the data gathered separately based on the quantitative and qualitative results. Creswell and Plano-Clark (2018: 339) state that “effective joint displays include data and inferences from quantitative and qualitative components, and mixed methods interpretations”.

The joint display was based on factors derived from the AL theoretical framework and the “*a priori*” factors. The “*a priori*” factors resulted from the quantitative research questions and the themes that emerged from the qualitative data analysis. A total of ten factors were identified, as listed below:

1. Frequency of DBs;
2. Perpetrators of DBs;
3. Trust in leadership;

4. Causes and triggers of DBs;
5. Coping mechanisms of DBs;
6. Reporting culture;
7. Patient safety prioritization and individual motivation;
8. Self-awareness and moral perspective;
9. Culture; and
10. Gender hegemony.

Table 7.1 below lists the factors, along with the type of data the factor corresponds to.

Table 7.1: List of factors and data type

Factor	Quantitative data type	Qualitative data type
1. Frequency of DBs (Prevalence).	Percentage of radiographers that were exposed to at least one incident of DB in the last 12 months prior to the study.	RM Interview data.
2. Perpetrators of DBs.	Percentage of perpetrators	RM Interview data.
3. Trust in leadership.	Percentage of radiographers that reported the DB incident.	Sub-themes: Radiographers expect their leaders to treat them well, and as a result, are comfortable being open with their leaders.
4. Causes/Triggers of DBs.	A Likert scale ranging from one (very low) to five (very high) was used to indicate participants' levels of agreement to questions about their work environment.	Themes: Work environment - surrounding conditions in which a radiographer operates.
5. Coping mechanisms of DBs.	Open-ended questions. Content analysis	RM Interview data.
6. Reporting culture.	A Likert scale ranging from one (very low) to five (very high) was used to indicate participants' level of agreement with questions about how they report incidents of DBs in their workplace.	Themes: Sub-theme:- reporting framework.
7. Patient safety prioritization and individual motivation	A Likert scale ranging from one (very low) to five (very high) was used to indicate participants' level of agreement with questions about their work environment.	RM Interview data
8. Moral perspective and self-awareness	No quantitative parallel.	Category: Emotional intelligence.
9. Culture	A Likert scale ranging from one (very low) to five (very high) was used to indicate participants' level of agreement with questions about the effect of culture on the behaviour of healthcare workers and patients.	Themes: Derived from research questions.
10. Gender hegemony	Percentage of females. Prevalence Odds Ratio.	RM Interview data.

The factors listed in **Table 7.1** above offer the structural framework for the joint display shown in **Table 7.2** below. Data that correlates with each factor will be presented. The second column of the joint display presents quantitative data and the third column presents qualitative data. However, some parts have only a single kind of data related to them. A comment then follows in the fourth column, stating whether the data sets confirm, complement or diverge (Creswell and Plano-Clark 2018: 337). If both data sets deliver similar viewpoints but do not explicitly confirm one another, they are labelled as complementing one another. Where the data offers dissimilar viewpoints, they are labelled as diverging. By examining the type of data merging (confirm, complement or diverge), the joint display enables the interpretation of the two strands of data.

Table 7.2: Joint display of quantitative, qualitative and mixed methods meta-inferences of DB factors

Factor	Quantitative findings	Qualitative findings	Mixed Methods meta-inferences
1. Commonness of DBs in HMP	<p>A significant 61% of the radiographers indicated that they had been exposed to DBs more than once, ($\chi^2 (2) = 34.820$, $p < .0005$). A further 22% had been exposed only once in the past year prior to the study. Overall, there was a prevalence of 83%.</p> <p>A significant 74% of radiographers in HMP indicated that they had indeed witnessed at least one incident of DB in the past year, ($\chi^2 (1) = 23.040$, $p < .0005$).</p>	<p><u>Commonness and need to document incidents of DBs.</u></p> <p><i>“These behaviours are very common and from a policy point of view, I believe that we need to document them so that we determine the prevalent ones so we find specific measures to address them. DBs in my opinion can only be adequately addressed if they are documented” (P#2; Female; PR).</i></p> <p><i>“I have experienced these DBs personally, and I have seen my fellow colleagues being subjected to these behaviours as well” (P#10; Male; CR).</i></p>	Confirm/ Complement
2. Perpetrators of DBs	<p>A significant 69% had been abused by a family member or escort of a patient, $p = .001$.</p>	<p><u>System pays more attention to complaints about abuse to patients than the health worker.</u></p> <p><i>“.... we always say the patient is right and as a result, I think the protocol favours the patient more than the health care worker. I have noticed that many times radiographers will not make complaints about DBs suffered at the hands of patients because they feel the system is biased towards the patient” (P#2; Female; PR).</i></p>	Complement

		<p><i>"As a hospital we need to protect our personnel...in our circles customer is king....whatever the patient does, you are at their mercy..." (P#10; Male; CR).</i></p> <p><i>"Health workers feel they are not protected by the system when patients abuse them" (P#2; Female; PR).</i></p> <p><i>"The general feeling is that admin entertains complaints from the patient than from staff. Like I told you that the conflict between physicist and doctor, nothing was done. It was thrown back to the department. They didn't solve anything. But if it's a patient they will come down and talk about it and try to find ways to solve the problem." (P#7; Female; CR).</i></p> <p><i>"So most of these behaviours are from patients, and most are verbal...." (P#10; Male; CR).</i></p>	
3. Trust in leadership	When radiographers that were exposed to incidents of DBs and did not report were asked the reasons, the majority (32.7%) felt that no action will be taken.	<p><u>Inability of leadership to adequately deal with DBs.</u></p> <p><i>"In the case where I do not succeed, I may have to take it up to my superiors. But still you always get the feeling that there will not be a remedy for the unacceptable behaviour that has been shown." (P#1; Male; PR)</i></p>	Complement

		<p><i>"There are no effective mechanisms to deal with DBs in this hospital because it's a bigger problem. For example, hospital management cannot solve issues to do with understaffing because the Ministry of Health has frozen the recruitment of health workers in public service. The only thing that they can do is to probably comfort you."</i> (P#3; Male; CR).</p> <p><i>".... it's difficult to address these kinds of issues and you know especially these Radiologists are treated with soft hands. They in "brackets" treated as specialists. If you get in the way of the specialist you as a radiographer are supposed to give in. So, in terms of confrontational issues to address that issue, it seems like the organisation will just say, for the sake of progress and for the sake of business just relax."</i> (P#10; Male; CR).</p>	
4. Causes/Triggers of DBs	<p>There was significant agreement that the following are triggers of DBs: Frustration due to poor working conditions ($M=3.93$. $p<.0005$), long waiting times for patients ($M=3.91$. $p<.0005$) and burnout or fatigue ($M=3.79$. $p<.0005$).</p>	<p><u>Poor work environment.</u></p> <p><i>"The inadequate equipment and high volumes of patient's leads to burnout and fatigue on the part of the radiographers. This triggers DBs"</i> (P#1; Male; PR).</p> <p><i>"...understaffing does trigger DBs that are displayed by health care workers because it puts people under a lot of pressure. Understaffing leads to long waiting periods for patients causing them to become anxious and, in the end, they may end up</i></p>	Confirm

	<p>There was significant agreement that differences in communication styles ($M=3.68, p<.0005$) and divergence of opinions/thoughts (e.g. differing views as to how a procedure should be carried out) ($M=3.59, p<.0005$) can trigger DBs.</p>	<p><i>abusing the radiographer and complaints start to come in.” (P#3; Male; CR).</i></p> <p><i>“To see that they are well remunerated and everyone is happy so that they render good service. I can surely tell you that people who are not happy ...in terms of their fuse it is short.... they are very quick to get ignited.” (P#9; Male; CR).</i></p> <p><u>Communication.</u></p> <p><i>“.... the cause of these DBs is a result of poor communication. Sometimes just having professional to professional interaction with the patient out of the picture can help in easing tension between doctor and radiographer.” (P#2; Female; PR).</i></p> <p><i>“I think communication is one of those areas that need to be worked on a periodic basis. For example, we should have refresher courses on communication because it solves a lot of these problems.” (P#11; Male; CR).</i></p>	
5. Coping mechanisms	<p>The majority of radiographers (35%) indicated that they ignored the incident and acted as if nothing had happened, while 23% spoke to colleagues and family members about the incident.</p>	<p><u>DBs ignored and internalized.</u></p> <p><i>“Not at all, employees they just carry on because it just sounds like, it has not really been questioned as to be a matter of concern, and it’s just like the norm. So, people come in and do this and people carry on with their business.</i></p>	Confirm

		<p><i>"These behaviours are taken as part of the job, it's not an issue. You internalize it and probably talk about it in the tea room and that's all"</i> (P#8; Female; ACR).</p>	
<p>6. Reporting culture</p>	<p>When radiographers that were exposed to incidents of DBs and did not report were asked the reasons, a significant 20.4% did not know where to report the incident, $\chi^2(6) = 21.120, p < .0005$.</p>	<p><u>Lack of reporting protocol as a reason for poor reporting of incidents.</u></p> <p><i>"...It is more like you get abused, maybe on night duty alone but there is no laid down protocol for you to report. So you will have to deal with the abuse on your own because there is no laid down protocol that allows you to have the issue addressed"</i> (P#1; Male; PR).</p> <p><i>"I think lack of written protocols, lack of organograms as to let people know what they are supposed to do and how they are supposed to do it. And the issue of reporting mechanisms, who people are supposed to report to and how"</i> (P#8; Female; ACR).</p> <p><i>"The first role of course is policy, you must have the policy to guard against these DBs."</i> (P#11; Male; CR).</p>	<p>Confirm</p>
<p>7. Patient safety prioritization and individual motivation</p>	<p>DBs lead to compromised patient safety ($M=4.72$), $p < .0005$; DBs can affect the way I implement radiation protection protocols and procedures ($M=4.42$), $p < .0005$.</p>	<p><u>Low motivation causes radiographers not prioritize patient safety.</u></p> <p><i>"In our case, I believe this issue of low remuneration leads to behaviours by radiographers that are not consistent with optimum operations and patient safety."</i> (P#1; Male; PR).</p>	

		<p><i>"...if you are absent minded, you can treat the wrong patient..." (P#6; Female; PR).</i></p> <p><i>And there is the issue of remuneration. This will affect the motivation of people when actually come to work." (P#5; Male; PR).</i></p> <p><i>"Low remuneration; the salaries are poor compared to what we used to get. The salaries are just too low. People will be just saying this is not worth it. People are no longer putting their maximum concentration or effort." (P#7; Female; CR).</i></p>	Complement
8. Moral perspective and self-awareness	No quantitative parallel.	<p><u>Balanced moral perspective and the ability to empathize with colleagues and patients.</u></p> <p><i>"...you are a qualified radiographer and you are supposed to be taking radiographs, but if you deliberately do a poor job because of poor remuneration, it's not ethical" (P#10; Male; CR).</i></p> <p><i>".... it takes us to the point of emotional intelligence. You need to understand why a certain problem has occurred, maybe that person has got a genuine problem, and maybe that person just wants to be difficult." (P#4; Male; ACR).</i></p> <p><i>"The development of emotional intelligence, amongst your staff, is an important aspect even at home, people need to feel for each other. Empathy towards the patient,</i></p>	

		<i>empathy towards other people and appreciate their existence.” (P#4; Male; ACR).</i>	
9. Culture	A significant number of 21-30 year old participants indicated that they had never being exposed to DB in the workplace; while a significant number of 31-40 year olds had been exposed to it more than once, Fishers exact = 11.726, $p=.011$.	<p><u>Influence of culture on behaviours shown in the workplace.</u></p> <p><i>“....we are mentored to respect our elders, regardless of, you do not question them or their behaviour. So even when you go onto the workplace and you know what you are supposed to be doing but if the elder wants you to do it that way then you will just have to abide even if it’s not the correct thing to do...” (P#8; Female; ACR).</i></p> <p><i>“.... it’s just a matter of superiority that I have noticed...you know. The seniors think they can bully the juniors and it carries on like that...” (P#8; Female; ACR).</i></p>	Diverge
10. Gender hegemony	A total of 21 radiographers suffered sexual abuse, whereby the majority 71 % (n=15) were female, while 29% (n=6) were males. A calculation of the prevalence odds ratio revealed that female radiographers were 1.8 times more likely than their male counterparts to be victims of workplace sexual abuse (95% C.I.: 0 – 3.04). On the other hand, the bivariate analysis showed that a significant number of males said they had NOT been verbally abused, $p=.012$ compared to women.	<p><u>Sexual abuse being perpetrated more by male figures than females.</u></p> <p><i>“.... we also have another one, where those that are senior, especially male figures, which abuse female figures. You find that they come to their office and be passing on comments you know that are sexually-oriented...” (P#11; Male; CR).</i></p>	Confirm

7.6 AREAS OF CONFIRMATION OR COMPLEMENTARITY IN THE DATA

Eight areas of confirmation or complementation identified in the data will be discussed in this section. These areas include:

- Commonness of DBs in HMP;
- Perpetrators of DBs;
- Trust in leadership;
- Triggers/Causes of DBs;
- Coping mechanisms;
- Reporting culture;
- Patient safety prioritization and individual motivation; and
- Gender hegemony.

7.6.1 Commonness of DBs in HMP

Firstly, the quantitative data indicated that the majority (83%) of radiographers had experienced DB, while a significant number (74%) had witnessed a DB incident involving another radiographer 12 months prior to the study. This means that DBs are very common at central hospitals in HMP and the majority of radiographers are experiencing these behaviours in their workplaces. The qualitative data confirms that these behaviours are rampant. Participant 10 states that he has been exposed to these behaviours and he has also witnessed colleagues being abused. On the other hand, Participant 2, emphasised the need to document these behaviours as a strategy to mitigate them. The manager argued that by knowing the prevalent DBs, interventions that are specific to this setting can be formulated. This assertion complements the data on the prevalence of DBs.

7.6.2 Perpetrators of DBs

The second area where qualitative data complemented the quantitative data was in relation to the perpetrators of DBs involving radiographers. A significant 69% of radiographers indicated that they had been abused by a family member or escort of a patient. The qualitative data could provide an explanation for this

manifestation. As previously described in the qualitative analysis, RMs believe that the leadership of central hospitals seems to care more about the image of the organisation than its personnel. The patient is considered to be “king” and they are always right when they are involved in a disagreement with staff. The problem with this mentality is that it blindly assumes that the health worker is wrong. This subjugates the employee to the patient, acting as an incentive for DB. This leads to the next factor, trust in leadership, as discussed below.

7.6.3 Trust in leadership

Thirdly, when radiographers that were exposed to incidents of DBs and did not report were asked the reasons, the majority (32.7%) felt that no action will be taken. This means that radiographers believe that their leaders are unable to objectively preside over disputes that occur in the workplace. The qualitative data confirmed this when some managers stated that patients are always assumed to be right, as discussed in the factor above (section 7.6.2). Moreover, radiographers believe that hospital leaders do not have enough power or authority to take drastic measures to address DBs because the healthcare system is controlled by politicians. Furthermore, because radiologists have long been in positions of power in radiology due to their being seen as revenue generators for the hospital, their DBs are overlooked or they are treated more leniently than radiographers. When there is a conflict, the radiographers are supposed to give in to a revenue-generating radiologist. This results in hospital managers reinforcing the perpetuation of these negative behaviours by yielding to the demands of the doctor. Lastly, RMs admit that DB is not a topic taught in the Radiography training program, so they may hesitate to take on a problem for which there is no clear solution.

7.6.4 Causes/Triggers of DBs

Another area of confirmation involves what triggers DBs at central hospitals in HMP. From the quantitative data, there was significant agreement that the following are some of the triggers of DBs: Frustration due to poor working conditions ($M=3.93, p<.0005$); long waiting times for patients ($M=3.91$.

$p<.0005$); and burnout or fatigue ($M=3.79$, $p<.0005$). This means that radiographers in HMP work under unsatisfactory conditions in terms of equipment, remuneration and workload. The qualitative data confirmed this as RMs also share the same sentiments, stating that although personal frustrations and system failures do not justify DB, they often create a tipping point by which a radiographer is pushed over the edge into full-scale DB.

Additionally, there was significant agreement that differences in communication styles ($M=3.68$, $p<.0005$) and divergence of opinions/thoughts (e.g. differing views as to how a procedure should be carried out) ($M=3.59$, $p<.0005$) can trigger DBs. RMs state that proper communication between radiographers and other healthcare workers or patients can go a long way towards preventing conflicts.

7.6.5 Coping mechanisms

The next confirmation occurred on issues regarding coping with the DBs. The majority of radiographers (35%) indicated that they ignored the incident and acted as if nothing had happened, while 23% spoke to colleagues and family members about the incident. This means that most radiographers internalized the stress associated with the abuse they suffered in the workplace. The qualitative data confirmed this when RMs indicated that most radiographers take these behaviours as part of the job. Radiographers also do not make formal reports but rather discuss these issues informally, for example, in the tea-room.

7.6.6 Reporting culture

According to the quantitative findings, when radiographers that were exposed to incidents of DBs and did not report were asked the reasons, a significant 20.4% did not know where to report the incident, $\chi^2(6) = 21.120$, $p<.0005$. This essentially means that the lack of a formal reporting protocol hampers the rate at which these behaviours are going to be reported by radiographers. The qualitative data confirms this as three RMs highlight that without a protocol in

black and white, radiographers find it difficult to have their issues reported and addressed. In addition, just having a documented protocol can act as a deterrent to some who may want to be disruptive.

7.6.7 Patient safety prioritization and individual motivation

The quantitative results revealed that there is significant agreement that DBs lead to compromised patient safety ($M=4.72$), $p<.0005$, by affecting the way radiographers implement radiation protection protocols or procedures ($M=4.42$), $p<.0005$. This means that radiographers themselves acknowledge the consequences of DBs on patient radiation safety. The qualitative results complement this by shedding light on ways in which this may happen. For instance, participants 6 and 9 argue that a DB incident diminishes the radiographer's ability to think clearly and make sound judgments. This can lead to mistakes that contribute to an unnecessary radiation dose received by the patient. In addition, both RMs highlight that DBs erode professional communication, which is crucial to patient safety.

7.6.8 Gender hegemony

The last area of confirmation was in the factor 'gender hegemony'. According to the quantitative results, a total of 21 radiographers suffered sexual abuse. The majority (71 %) ($n=15$) were female. A calculation of the prevalence odds ratio revealed that female radiographers were 1.8 times more likely than their male counterparts to be victims of workplace sexual abuse (95% C.I.: 0 – 3.04). Furthermore, the bivariate analysis showed that a significant number of males indicated that they had NOT been verbally abused, $p=.012$ compared to women. The presence of gender hegemony was confirmed by the qualitative results when one RM stated that females were more likely than males to be targeted.

7.7 AREA OF DIVERGENCE

There was divergence in the data with issues regarding the impact of traditional culture on DBs in the workplace. The quantitative results revealed that a significant number of 21-30-year olds indicated they had never been exposed to DBs in the workplace; while a significant number of 31-40-year olds had been exposed to it more than once, with Fisher's exact = 11.726, $p=.011$. The qualitative data, on the other hand, reveals that the tradition of respecting elders affects the behaviour of people in the workplace. The result is that older or senior people are more likely to abuse their juniors. One would have expected a significant correlation between being disruptive and being older or senior, i.e., that younger and less experienced radiographers would be targeted. This divergence could be attributed to the young and relatively homogeneous sample of radiographers in this study. The majority (70%) of the sample were in the age group 21-30 years. This means that most of the radiographers at central hospitals are peers, with just a handful of elders. Peers are unlikely to have misunderstandings that can be attributed to the generation gap. The qualitative results in this case could provide more reliable data.

7.8 CHAPTER SUMMARY

This chapter presented the mixing and integration of both the quantitative and qualitative results by using a joint display. Instances of confirmation, complementarity and divergence were identified and discussed. This allowed the development of results and interpretations that increase understanding, are comprehensive, authenticated and confirmed. The next chapter will be a discussion of the results from both the quantitative and qualitative strands of the study.

CHAPTER 8: DISCUSSION OF THE RESULTS FROM BOTH THE QUANTITATIVE AND QUALITATIVE PHASES OF THE STUDY

8.1 INTRODUCTION

This chapter presents a discussion of the findings discussed in the preceding three chapters. Firstly, a summary of the study problem and justification is presented. The second part reviews the motivation of this mixed-methods study and the research questions for each strand of data collection. The next section includes a discussion of major findings as related to the literature on the types, causes, consequences of DBs involving radiographers in HMP and strategies to mitigate them. The chapter concludes with a discussion on connections to this study and the AL theory (Hystada *et al.* 2014: 42), followed by a brief summary.

8.2 SUMMARY OF THE STUDY PROBLEM AND JUSTIFICATION

Disruptive behaviours in healthcare have become an unprecedented global problem, transcending borders, work settings and professional groups (Rehder 2020: 1, Keller *et al.* 2020: 19). Concerns about their impact on patient safety led numerous international medical organisations (Institute of Medicine, 2000; Institute of Medicine, 2007), the Joint Commission standard connected to inappropriate and disruptive behaviour (Joint Commission 2008: 1; Commission 2016: 1) and other healthcare professions (The College of Physicians and Surgeons of Alberta 2010: 2; ACOG 2017: 1; ICN 2017: 1; McArdle 2019) to escalate the urgency of knowing the prevalence, causes and consequences of these negative behaviours in different healthcare settings. This study represents a unique approach to this broad topic of DBs in healthcare by focusing on a professional group previously under-represented in research: radiographers in low resource settings. There are few studies

exploring these behaviours in Radiography (Brown *et al.* 2009: 479; Ng *et al.* 2009: 355; Fredrick 2014: 24), more so in low resource settings like Zimbabwe (Chappell and Di Martino 2006: 50; Jain *et al.* 2012: 326; Sisawo *et al.* 2017: 1). Indeed, there is no written policy to monitor and mitigate DBs in the Zimbabwean Radiography workforce. Understanding the perspectives of radiographers in these settings is significant, as this professional group uses hazardous radiation in the execution of their duties with inadequate resources, making patient safety of paramount importance. Without a doubt, compromised radiation protection and safety in radiography can lead to an increase in the risk of patients developing stochastic effects like cancer (Quinn 2019: 761). It is against this backdrop that mitigating DBs in Radiography is a matter of urgency. In fact, the certification of healthcare organisations in some jurisdictions now depends on the facility's ability to efficiently address DBs (Longo 2010: 5). The research outcomes of this dissertation will provide an evidence-based framework to mitigate these behaviours in the study's setting.

In a nutshell, compelling evidence to carry out this study can be summarized as:

- a. Despite efforts to improve health worker conduct, DBs remain common occurrences, as frequently as daily in many healthcare settings, and radiography is not immune.
- b. The global situation reveals that both public and private organisations have not understood the benefits of healthy work environments, or lack the knowledge, tools or skills to improve things (Burton 2010: 7).
- c. Most research to date has concentrated on assessments of DBs from the perspective of nurses, physicians and pharmacists, but has not examined consequences for other healthcare workers, like radiographers in their unique work settings.
- d. There are relatively few studies in radiography specifically, let alone in low resource settings like Zimbabwe. Most researchers advocate tailor-made interventions that are determined by the characteristics of the setting. For example, codes of conduct, culture and bylaws.

- e. Furthermore, while some studies have looked at the consequences of DBs, only a few explored patient safety. Radiography is unique in that it has extra patient safety measures related to radiation.
- f. It is also worth noting that most research on radiation protection and safety in radiography has been done from a technical point of view, while the behavioural aspects (including DBs) have been overlooked.

8.3 REVIEW OF THE PURPOSE OF THE STUDY AND RESEARCH QUESTIONS

The purpose of this mixed-methods study was to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. In accordance with a mixed methods study, two sets of research questions were generated in Chapter One, namely one for the quantitative strand and another for the qualitative strand of the study.

The quantitative research questions were:

1. *Which DBs involving radiographers impede a safe work environment at central hospitals in HMP?*
2. *What are the consequences of DBs involving radiographers employed by central hospitals in HMP?*

On the other hand, the following questions guided the qualitative strand:

1. *What are the environmental and cultural factors to mitigate DBs involving radiographers at central hospitals in HMP?*
2. *How to mitigate DBs involving radiographers in central hospitals in HMP?*

As previously discussed in Chapter 4, this study employed a convergent parallel mixed-methods design using the parallel databases variant. Fundamentally, both quantitative and qualitative data were collected simultaneously; analysed independently, respectively; and merged to answer the research question;

- *To what extent do the quantitative and qualitative results converge?*

The motivation for collecting and mixing quantitative and qualitative data was to offer the diversity plus depth of data on DBs involving radiographers in order to answer the research questions and to augment rigour through methodological triangulation (Teddie and Tashakkori 2009: 32; Creswell and Plano-Clark 2018: 53).

8.4 DISCUSSION OF QUANTITATIVE AND QUALITATIVE FINDINGS

The findings from the current study indicate that DBs involving radiographers in HMP are rampant and create an unhealthy work environment that can lead to compromised patient radiation protection by negatively affecting the implementation of radiation protection protocols or procedures. Cultural and environmental factors relating to DBs in HMP include power hierarchy, the work environment and the absence of a reporting framework. Moreover, the strategies to mitigate these behaviours may include awareness, willingness to address them and conflict resolution. This section presents a detailed discussion of these findings by presenting the prevalence, antecedents or causes, factors, consequences and mitigatory strategies of DBs at central hospitals in HMP, Zimbabwe. The results from both the quantitative and qualitative phases of the study are discussed with reference to the research questions. Furthermore, a comparison of the findings with the broader literature will be undertaken where possible. Greater emphasis will be given to areas where the data from both strands either confirmed or complemented each other, so that the researcher advances arguments that are comprehensive, authenticated and confirmed.

8.4.1 Disruptive behaviours involving radiographers at central hospitals in HMP

8.4.1.1 Prevalence of DBs

To the researcher's knowledge, this is the first study to document DBs involving radiographers in Zimbabwe. The quantitative findings reveal a high prevalence (83%) of exposure within 12 months prior to the study. The qualitative

comments confirm that these behaviours are rampant and need to be documented. These findings suggest that the majority of radiographers at central hospitals in HMP are suffering from these perilous incidents in their workplaces. Regardless of some differences in the definition of these behaviours; targeted healthcare professional groups; methods employed; and sample size, the prevalence of DBs in this study is comparable to and higher than in most studies in the literature, as shown in Table 8.1 below (Ng *et al.* 2009: 355; Abbas and Selim 2011: 1049; Sisawo *et al.* 2017: 1; Sethole *et al.* 2019: 272; Hattingh *et al.* 2019: 19; Rehder *et al.* 2020: 18).

Table 8.1: Prevalence and types of DBs in the literature compared to this study

DBs	Zimbabwe*	Gambia (Sisawo <i>et al.</i>)	Namibia (Hattingh <i>et al.</i>)	Egypt (Abbas & Selim)	Hong Kong (Ng <i>et al.</i>)	South Africa (Sethole <i>et al.</i>)	USA (Rehder <i>et al.</i>)
Prevalence (%)	83	62.1	100	79.8	61	-	51.7
Verbal abuse (%)	81	59.8	100	98.7	96.7	73	-
Sexual abuse (%)	21	10	84.6	1.3	10.3	-	-
Physical abuse (%)	4	17.2	46.2	38.7	20.8	14	-

*Current study

However, most studies have evaluated the prevalence of DBs in either the developed world and/or have mainly focussed on the perspective of nurses or physicians (Vukmir 2016: 10; Keller *et al.* 2020: 1). This study is significant because despite DBs being universal in healthcare, each healthcare profession and setting presents unique DB triggers (ILO *et al.* 2002: 1; Willis *et al.* 2018: 1640). The findings of this study can be used as a reference point for studies seeking to further evaluate the challenge of DBs in the Zimbabwean Radiography labour workforce. By extension, the results may also contribute to the existing literature on low resource settings, where the topic is under-represented (Jain *et al.* 2012: 326; Sisawo *et al.* 2017: 1).

8.4.1.2 *Types of DBs*

Radiography managers argued that by knowing the common types of DBs, interventions that are tailored to the study's setting can be formulated. These findings resonate with existing literature as most researchers advocate tailor-made interventions that are determined by the characteristics of the setting, for example, professional codes of conduct, culture and by-laws (Fagermoen 1997: 434; Geoffrion *et al.* 2015: 204). An investigation by Berman-Kishony and Shvarts (2015: 26) further uncovers contrasts in DB types, triggers and results amongst clinical departments, and their impact on the selection of tools for effective mitigation. Customized interventions consider the setting's conditions and feasibility considering available resources (Vukmir 2016: 60).

- Verbal abuse

The most common type of DBs reported in this study was verbal abuse, which is consistent with the literature, as shown by Table 8.1 above. These findings were anticipated because it is difficult to pinpoint verbal abuse, as well as to get the aggressor penalised as is because people with different personalities have different levels of tolerance for gossip, teasing or sexual jokes.

- Sexual and physical abuse

However, sexual abuse was the second-highest, while physical abuse was the least common in the present study. This was at odds with most studies (Table 8.1), but similar to the quantitative study by Hattingh *et al.* (2019: 19) in a single centre in Namibia. Despite the small sample size (13 radiographers) in their study, Hattingh *et al.* (2019: 19) attributed this to a lack of awareness of what constitutes sexual harassment amongst the perpetrators and the radiographers. Nevertheless, the current study attributes the high prevalence of sexual abuse to other additional factors, including:

- i. *Gender hegemony* - Socio-cultural aspects like patriarchal gender affairs may influence healthcare workplace behaviours. In this study, female radiographers were more likely to be victims of workplace sexual abuse.

In the Shona culture, patriarchal practices shape and propagate gender hegemonic norms in the workplace because, according to Kambarami (2006: 2), “custom in Africa is stronger than domination, stronger than the law, stronger even than religion”. Indeed, a study by Transparency International Zimbabwe (TIZ) (2019:1) concluded that sexual harassment in Zimbabwe is institutionalised, and that women have been suffering for a very long time.

- ii. *Lack of mechanisms to detect or identify sexual harassment and mechanisms to support victims of sexual abuse* – The Zimbabwean Constitution (No 20 of 2013) does not explicitly provide for protection against abuse; moreover, there is no definition of sexual harassment in the Labour Act (28:01) and the Public Service Act (16:4) does not include disciplinary procedures for sexual harassment. Nonetheless, Statutory Instrument 1 of 2000 tersely includes sexual harassment as a mere misconduct (Matsikidze 2017: 2; Bulla-Musakwa 2021: 10). It is therefore conceivable that perpetrators may be taking advantage of these factors to pounce on women mainly in the different workplaces. In conclusion, the results suggest that healthcare leaders must institute additional policies to combat sexual abuse in their workplaces (Women’s Coalition of Zimbabwe 2019:1; TIZ 2019: 1). The latter discussion reveals how by-laws can influence workplace behaviour. However, more research is required.

8.4.1.3 Perpetrators of DBs

Patients and their escorts or family members were the main perpetrators of the DBs in this study. This was congruent with findings from previous studies (Ng *et al.* 2009: 355; Abbas and Selim 2011: 1049; Hattingh *et al.* 2019: 19). While the latter studies employed only the quantitative approach, the current study was distinctive because it included a qualitative strand. Radiography managers revealed that the patient is considered to be “king” and they are always right when they are involved in a disagreement with staff. This subjugates the radiographers to the patient, acting as an incentive for the latter to be disruptive.

According to Vogel (2016: 241), traditionally, patients are seldom charged for abuse of healthcare workers because they are not in control of their faculties when compromised by illness, distress or drugs. Consequently, radiographers endure the patients' abuse in HMP. In the developed world, healthcare workers are canvassing for harsher legal penalties for abusive patients (Canadian Medical Association General Council 2015: 4).

The current study found that DBs can also be committed by radiographers themselves or any member of the healthcare team. This was also reported in previous studies (Abbas and Selim 2011: 1049; Hattingh *et al.* 2019: 19; Sethole *et al.* 2019: 272).

8.4.2 Antecedents or Causes of DBs involving radiographers employed by central hospitals in HMP

8.4.2.1 Organisational or situational antecedents

In this study, quantitative results showed that organisational or situational factors scored relatively highly on the Likert scale. There was considerable agreement that the following are the most common triggers of DBs: frustration due to poor working conditions, long waiting times for patients and burnout or fatigue. The qualitative data confirmed this as RMs indicated that although personal frustrations and organisational failures do not justify DBs, they frequently create a tipping edge by which a patient or healthcare worker is pushed over the point into full-scale DBs. There is significant research on the antecedents, cause or triggers of DBs in different healthcare professional groups and settings, albeit not so much in low resource setting radiography. A number of studies categorised causes of DBs into intrapersonal, interpersonal and organizational or situational antecedents (Health Quality Council of Alberta 2013: 11; Villafranca *et al.* 2015: 6; Bae *et al.* 2016: 1). Intrapersonal antecedents are existing within the individual; interpersonal antecedents happen between people; and organisational or situational antecedents are attributed to the place of work (Oliveira *et al.* 2016: 693).

While studies generally identify the various antecedents, the order (from most common to least common) in which these occur differs with different healthcare professions and settings (Berman-Kishony and Shvarts 2015: 26). For instance, the majority of studies done in high resource settings indicated that intrapersonal (e.g. individual personalities) and interpersonal (e.g. poor communication) factors scored higher than organisational or situational factors (Lingard *et al.* 2002: 232; Riley and Manias 2006: 55; Cochran and Elder 2014: 390; Hamblin *et al.* 2015: 2458). In contrast, the organizational or situational factors (e.g. poor working conditions, long waiting times for patients and burnout or fatigue) scored the highest in this study. Pattani *et al.* (2018:1569) argue that current strategies to mitigate DBs focused on changing individual behaviour, but chances exist to reduce these behaviours through a greater understanding of the role of healthcare organizations in influencing workplace ethos. In conclusion, organizational and system failures may have a profound influence on the way in which healthcare workers and patients treat each other at the public hospitals in HMP. These failures could be traced to the central government because according to RMs, all strategic healthcare decisions are made at the national rather than at the hospital level. Dictatorial governments tend to centralize power (Khidia 2018: 3). These findings are interesting because they reiterate the claim by Burton (2010: 69) that governments create the broader context of the healthcare environment that influences working conditions, healthcare worker behaviour and health inequities.

Zimbabwe has been characterised by perennial labour disputes between the government and public healthcare workers, including radiographers, since the mid-1980s (Mutizwa-Mangiza 1998: 3; Ncube 2016: 1; Nyoka 2017: 1). The healthcare workers have repeatedly cited a lack of consumables, inadequate and malfunctioning equipment, understaffing and poor remuneration (Chingono and Busari 2019: 1; Ndebele 2020: 1). For example, in 2008, all government healthcare workers earned less than US\$1 per month (Khidia 2018: 1). Mutizwa-Mangiza (1998: 25) asserts that remuneration is the single most significant factor influencing healthcare worker behaviour in the workplace. Despite the Labour Act of Zimbabwe (Ministry of Justice 2006: 10) making

provision for a safe working environment, fair remuneration and right to collective bargaining, the government of Zimbabwe has used intimidation to deal with the collective bargaining on several occasions, including the dismissal of radiographers and other healthcare workers (Paul 2018: 2; Gonye and Mushava 2019; Zimbabwe 24 2019: 4). The ILO *et al.* (2002: 1) research findings indicate that a style of management based on intimidation is one of the predisposing factors of DBs in low resource settings.

According to Mayhew (2017: 1), poor working conditions can have profound effects on workers in terms of disappointment, anger, low morale and stress. Firstly, when workers believe that they should be getting more money, they show signs of general frustration. Consequently, their workplace relations suffer, mainly the professional interactions they have with other colleagues. Secondly, workers who are underpaid may experience stress related to finances due to a failure to meet monthly responsibilities. Stress distresses families and can creep into the workplace, causing low morale and productivity. Frustration and irritability can affect self-confidence and overall well-being. Thirdly, low morale is frequently linked to worker dissatisfaction. Workers who are disgruntled with their working conditions may exhibit apathy towards their work duties. Low morale can turn into feelings of dejection and unimportance, which can be damaging to the workplace. In certain cases, workers who suppress extreme hopelessness and worthlessness may find themselves involved in DB more often than other workers.

8.4.2.2 Other antecedents of DBs

This study also identified other causes or triggers of DBs, listed in order of score, namely: narcissism; differences in communication styles; divergence of opinions/thoughts (e.g. differing views as to how a procedure should be carried out); personal conflicts or family problems; self-protection against feelings of inadequacy; dysfunctional organizational culture (e.g. the organisation is not effective in ensuring patient/employee safety) and cultural, generational or

gender bias. All these have been mentioned in the general literature (Oliveira *et al.* 2016: 696; Keller *et al.* 2020: 1).

8.4.3 Consequences of DBs in low resource setting Radiography

8.4.3.1 Radiation protection and safety

The quantitative results revealed a significant agreement that DBs lead to compromised patient safety by affecting the way in which radiographers implement radiation protection protocols or procedures. This means that radiographers themselves acknowledge the negative consequences of DBs on patient radiation safety and protection. Although the consequences of DBs on patient safety involving other healthcare professions have been well documented by many authors in literature (Porath and Erez 2009: 29; Oliveira *et al.* 2016: 694; Riskin *et al.* 2017: 1; Bambi *et al.* 2018: 51; Katz *et al.* 2019: 29; Royal College of Surgeons of England 2021: 13), none of these works have specifically addressed low resource setting radiography. Studies by Brown *et al.* (2009: 479), Fredrick (2014: 24) and Sisawo *et al.* (2017: 1) acknowledged this gap and determined that additional research was necessary to address how these behaviours might affect radiography. The current mixed-methods study was designed to address this gap by evaluating and exploring the consequences of these behaviours at central hospitals in HMP. While findings in other healthcare professions and settings have shown that DBs, if not addressed, can cause medication errors, wrong-site surgery and patient mortality (Jericho *et al.* 2012: 4; Grocott and Bryson 2017: 120; Layne *et al.* 2019: 2; Ruplin and McCarthy 2019: 281), this study suggests that patient radiation protection and safety may be compromised by DBs in low resource setting radiography.

The implementation of radiation protection and safety practices in radiography has always been done from a technical point of view, for example, the use of Dose reference Levels and Exposure Indicators (Seeram *et al.* 2013: 331; Lewis *et al.* 2019: 38; IAEA 2020: 1), leading to the establishment of a body of knowledge that is mostly technical, one-dimensional and quantified (Squibb

2013: 104). Insufficient attention has been paid to the behavioural or humanistic factors in patient safety (Kilner and Sheppard 2010: 127; Pham *et al.* 2012: 452). However, the technical point of view does not provide solutions to all problems related to radiography practice, especially the “human” side of the profession involving the patient encounter and staff working interactions (Munn *et al.* 2013: 47). The current study is unique because it emphasizes the humanistic factors in patient safety. Indeed, the next main task in safety research is to assess and mitigate the human behavioural factors and processes that influence safety in the workplace (Zohar 2010: 42). There is already significant research in other fields, other than radiography, indicating that human factors such as DBs can have a profound impact on safety behaviours in the workplace (Porto and Lauve 2006: 1; Neal and Griffin 2009: 15; Hystada *et al.* 2013: 42; Borgersen *et al.* 2014: 394; Oah *et al.* 2018: 427).

The qualitative results complemented the above findings by shedding light on ways in which patient radiation protection and safety can be comprised: Firstly, DB incidents may diminish the radiographer’s ability to think clearly and make sound judgments. This can lead to repeat examinations or the wrong patient or anatomy may be imaged or treated, which contributes to an unnecessary radiation dose being received by the patient. In addition, DBs erode professional communication, which is crucial to patient radiation protection and safety. Regarding how DBs diminish the radiographer’s ability to think clearly and make sound judgments, numerous studies have reported that DBs affect working memory, which is the “workbench” of the cognitive system where most analysis, planning and management of objectives take place (Engle and Kane 2003: 150; Porath and Erez 2009: 29; Katz *et al.* 2019: 750; Gilam *et al.* 2020: 1). Therefore, exposure to incidents of DBs can negatively impact the cognitive functions essential for efficient diagnostic and medical procedural performance (Riskin *et al.* 2015: 487; Riskin *et al.* 2017: 1). Radiographers are trained to safely operate equipment that produces radiation, use protective gadgets, obey standardized protocols or procedures and select technical exposure factors that significantly reduce radiation doses received by patients and the public (Alice *et al.* 2014: 2). Accordingly, these DB behaviours could consequently negatively

affect the correct and consistent implementation of the radiation protection protocols by radiographers. This is of significant concern with the advent of digital radiography, due to the “uncoupling effect”, whereby it is difficult to recognise when a radiation dose that is higher than required is given (Romans 2011: 60; Seeram 2019: 55). In addition, radiographer temperament is crucial in radiation protection and safety (Quinn 2019: 543).

Concerning the erosion of professional communication, a number of studies have established a link to DBs. The ISMP's (2013:1) study is one significant example of how DBs can erode professional communication and compromise patient safety. The study highlighted that healthcare workers who are forced to deal with DBs might learn to cope by avoidance. As a result, they may fail to deliver timely communication about patients' problems and concerns. In a different study, DB in the peri-operative arena was shown to have a major impact on communication flow, which can have an adverse impact on patient safety (Stewart *et al.* 2011: 93). In yet another survey of health workers, in relation to six specific DBs, the study noted the following two: persons who turn their backs before a conversation is over and persons who hang up the phone before a conversation is concluded (Rehder *et al.* 2020: 19). Fatahi (2019: 585) further argues that effective professional communication and teamwork are the fundamental building blocks to improve patient safety and meet the necessities for increasingly satisfactory care in radiology. Therefore, it is apparent that DBs can erode professional communication, which is critical for patient safety. The effect of these behaviours on the well-being and safety of patients makes mitigating them a matter of urgency (Health Quality Council of Alberta 2013: 10, Keller *et al.* 2020: 1).

8.4.3.2 Other consequences of DBs

Other consequences of DBs were established by this study, which include: DBs create an unhealthy or hostile work environment; DBs are a threat to the image of the organization; DBs cause the recipient to experience fear, anger, shame and confusion; DBs can negatively affect collaboration in the radiology

department; DBs undermine patient confidence, making patients less likely to ask questions; DBs impact negatively on organizational culture; DBs lead to compromised patient satisfaction; and DBs increase radiographer resignations and absenteeism. These findings are generally in harmony with those of most studies done in the developed world involving other healthcare workers (Jericho *et al.* 2010: 7; Rosenstein 2017: 61; Grissinger 2017a: 74; Kisner 2018: 36; Smith *et al.* 2018: 219).

8.4.4 Environmental and cultural factors to mitigate DBs involving radiographers

The qualitative findings showed that a number of environmental and cultural factors must be considered in formulating a framework to mitigate DBs involving radiographers working at central hospitals in HMP. The theme 'environmental and cultural factors' consists of 3 related sub-themes, namely power hierarchy, work environment and reporting framework. These will be discussed below respectively.

8.4.4.1 Power hierarchy

The qualitative findings allow the researcher to state that the idea of levels of power within interpersonal interactions, whether perceived or real, may be a significant factor in the exhibition and tolerance of DBs in HMP. Doctors, for instance, generally perceive themselves as superior to other healthcare professionals because they generate high revenue for the hospitals and are the only healthcare professionals considered for senior management positions in the Zimbabwean public healthcare system. Disruptive behaviours committed by doctors may be overlooked or treated more tolerantly. This results in hospital managers reinforcing the perpetuation of these negative behaviours by yielding to the demands of the doctor. Furthermore, this power ladder has also been observed amongst the patient, their escorts or family members and the radiographer. The quantitative findings confirmed this by showing significant agreement that a sense of privilege and status for those at the top and narcissism may be the causes of DBs.

This study's conclusion that a power hierarchy within healthcare interactions is a factor in the display of DBs resonates with historical literature. Workers within hospitals often perceive that powerful, revenue-generating doctors are tolerated for DBs due to the apparent consequences of confronting them (Weber 2004: 6; Keogh and Martin 2004: 18; ACOG 2017: 1). A study conducted by The American College of Physician Executives (ACPE) on doctors' behaviour found that 38.9 percent of the participants agreed that "physicians in my organization who generate high amounts of revenue are treated more leniently when it comes to behaviour problems than those who bring in less revenue" (The Joint Commission 2008: 1). This basically rewards the DB and leads to a "normalization of deviance," with DB becoming an accepted way of doing things for some doctors, and even for some healthcare workers who emulate the conduct (Porto and Lauve 2006: 1). Furthermore, in the Zimbabwean context, the Public Health Act of 1924, which is still in use, recognises medical doctors as the only health professionals considered for administrative posts in the MoHCC, which can further nurture their narcissistic tendencies (Mutizwa-Mangiza 1998: 11; Chikandiwa 2021: 10). This finding further reinforces the impact of by-laws on the exhibition and tolerance of DBs, as already discussed. Longo (2010: 4) argues that when examining potential factors in DBs, it is important to consider the concepts of power and authority. The perceptions of having power and/or yielding to power contribute to the enduring tolerance of DBs.

According to the present study, a power hierarchy may also be observed between radiographers who are on different professional levels due to experience, age or management position. However, the qualitative findings can be further interpreted as meaning that younger radiographers were more likely to experience workplace DBs. This study's quantitative results painted a rather different picture, i.e., a greater number of younger radiographers indicated they had never been exposed to DBs in the workplace compared to their older colleagues. While the qualitative findings were consistent with the literature (Villafranca *et al.* 2015: 781; Minton and Birks 2019: 583; Keller *et al.* 2020: 8), the quantitative findings were in conflict. This divergence could be attributed to

the young and relatively homogeneous sample of radiographers in this study. The majority (70%) of the sample were in the age group 21-30 years. This has been caused by the massive exodus of older and experienced radiographers into the diaspora in search of greener pastures (Ndangana 2020: 1). This means that most of the radiographers at central hospitals are peers with just a handful of elders. Peers are unlikely to have misunderstandings that can be attributed to a generation gap. This claim could similarly explain the low radiographer-on-radiographer incivility reported in the current study. According to Sedrak and Cahill (2011: 1), individuals within a generation normally share related views on several subjects including politics, music, religion, family and work ethos. Divergent opinions on these issues are usually present across generations, triggering conflicts in the workplace that affect patient care and safety, recruitment, turnover, employee output and organizational drive.

8.4.4.2 Work environment

The interviews with RMs showed that the characteristics of the work environment, whether physical or psychological, are an important risk factor for DBs. The physical risk factors identified in this study include remuneration, burnout and fatigue, which have been addressed above (section 8.3.2). On the other hand, the psychological factors include trust in leadership, equality and career progression. The most important psychological risk factor identified in this study was trust in leadership. The qualitative data found that DBs are rampant in HMP because of the reluctance of managers to adequately tackle the problem. The quantitative strand confirmed those findings, i.e., when radiographers that were exposed to incidents of DBs and did not report were asked the reasons, the majority felt that no action will be taken. This suggests that radiographers in HMP believe that their leaders are unable to impartially preside over disputes that occur in the workplace. However, the foundation of a healthy work environment is created by organizational integrity, respect and equality, which form the foundation of trust.

The findings of this study resonate with literature that leaders may be hesitant to deal with these behaviours decisively for a number of reasons. A study by

Pattani *et al.* (2018: 1572) showed that the failure of leaders to identify, admit and challenge DBs was believed to sustain the “code of silence”. They further hypothesize that inadequate training; no personal or organizational penalties; ingrained beliefs; reluctance in confronting senior members; and failed previous efforts at conflict resolution, permitted “historical bullies” to flourish. This study’s qualitative findings support most of their claims. The reasons for this inability to tackle the problem as gathered from the qualitative strand include the absence of a DB reporting policy; the patient is considered “king” philosophy; radiographers believe that the hospital leaders do not have enough power or authority to take drastic measures to address DBs because the healthcare system is controlled by politicians; doctors have long been in positions of power in healthcare establishments and they are treated more leniently when they are disruptive. Lastly, RMs themselves admit that DB is not a topic taught in the Radiography training program, so they may hesitate to take on a problem for which there is no clear solution.

Five studies investigating nurses found that the nurse managers’ skills to handle DBs or setting the right tone (Budin *et al.* 2013: 308; Bradley *et al.* 2015: 541; Afzali *et al.* 2016: 267; Minton and Birks 2019: 12) was a protective factor against these behaviours. Leadership style has also been associated with the presence or absence of DBs in a given professional group. For instance, AL was found to be protective against DBs (Read and Laschinger 2013: 221; Alkaabi and Wong 2019: 27), whereas laissez-faire and autocratic leadership have been implicated in increased DBs (Afzali *et al.* 2016: 268). Likewise, Zacharatos, Barling and Iverson (2005: 77) established that management trust and an observed safety climate positively impacted the safety performance and attitudes of workers.

8.4.4.3 Reporting framework

The qualitative results were viewed as meaning that the lack of a deliberate, specific and clear protocol that allows radiographers to report in confidence is a factor that may affect the reporting rate of DBs. The quantitative results

confirmed these qualitative findings, i.e., when radiographers that were exposed to incidents of DBs and did not report were asked the reasons, a significant number claimed they did not know where to report. The interviewees further revealed that the majority of the incidents are talked about casually with colleagues, such as during tea breaks. Some radiographers take the DB incidents as part of the job and hence internalize the abuse and carry on as if everything is normal. Nonetheless, the consequence of this is that these behaviours persist, giving a false impression that these behaviours are not rampant.

Relating to the absence of a reporting protocol, this study's findings are in harmony with several studies which indicate that only a few organizations have policies or procedures for evaluating, documenting, quantifying and mitigating DBs (Porto and Deen, 2008; Longo, 2010; Zimmerman and Amori, 2011; Bambi *et al.* 2018). Works by Longo (2010: 1) and Sisawo *et al.* (2017: 19) establish that having a written protocol on DBs that is communicated to every staff member increases the reporting rate and hence mitigation of these behaviours. Furthermore, the ICN (2017: 1) also shares the latter sentiments by asserting that a lack of a written DB protocol is tantamount to failure to tackle the problem. This study aimed at addressing this gap by developing a framework to mitigate DBs that can be adopted by leadership in HMP. This study is therefore vindicated because, currently, there is no written policy or protocol at central hospitals in HMP for addressing DBs that involve radiographers. It is anticipated that this study will help Radiography departments develop strategies to mitigate DBs and contribute to the creation of a healthy workplace in which safe, affordable and excellent patient care can be delivered. Certainly, according to Burton (2010: 7), many organizations and governments have not understood the benefits of healthy work environments, or lack the knowledge, tools or skills to improve things.

Pertaining to the reporting of DBs by radiographers, this study's findings are also similar to those found in literature, notwithstanding in other healthcare professions, which indicate that these behaviours go unreported for various

reasons (Sherrill 2016: 17; Grissinger 2017: 74; Edmondson 2019: 77). This is referred to as the “code of silence” where healthcare workers are reluctant to report DBs. According to Vukmir (2016: 60), if the code of silence is accepted, it may result in tolerance and indifference to DBs. Villafranca *et al.*’s (2015: 367) study revealed that DBs were under-reported by 96.5% of their respondents, and never reported by 30.9% of respondents. Some health workers accept DBs, especially non-physical, as part of the job (Geoffrion *et al.* 2015: 195; Beattie *et al.* 2019: 75; Hattingh *et al.* 2019: 19). This study allowed radiographers to share their perceptions about DBs anonymously. The American College of Obstetricians and Gynaecologists (ACOG 2017: para 2. line 5) explained that “co-workers often are reluctant to report DBs because of fear of retaliation and the stigma associated with ‘blowing the whistle’ on a colleague”. Therefore, anonymity in this study provided a way for radiographers to share their concerns about DBs without fearing any type of retribution. This is important because if employees are not comfortable, they may not report concerns. Under-reporting, according to Sisawo *et al.* (2017: 9) may be detrimental to efforts to mitigate these behaviours.

8.4.5 Strategies to mitigate DBs involving radiographers in HMP

This theme relates to the experiences of RMs and the strategies they have adopted to mitigate DBs in their respective departments. Furthermore, their opinions and feelings about these behaviours are highlighted so that effective solutions to deal with these behaviours can be established. It comprises three sub-themes: awareness of DBs, willingness to address DBs and conflict resolution.

8.4.5.1 Awareness of DBs

The qualitative results are taken to mean that radiographers and other healthcare workers should be made conscious of these behaviours in their workplaces. This is in agreement with other scholars. For instance, according to Rosenstein (2015: 2), awareness is the first strategy in mitigating DBs. Many people may not be mindful of their actions being seen as DBs and are also

unconscious of the possible negative subsequent results. Raising awareness and suggesting how they could have better managed the state of affairs will enable many of these people to correct themselves. Awareness is also vital because healthcare workers have frequently been subjected to these events such that they are often accepted as “part of the job” (Sisawo *et al.* 2017: 1). In addition, Grissinger (2017: 74) argues that responsibility for mitigating the problem belongs to the leaders who need to raise awareness of the problem, inspire others to change, communicate respect as a core value, articulate their commitment to achieving it and create a sense of urgency around doing so.

Nonetheless, Longo (2010: 5) asserts that when raising awareness, it is imperative to describe the types of behaviour that are considered disruptive, and these should be communicated. These descriptions are vital since they provide a context that enables leaders to effectively provide peer reviews of colleagues and provide a framework for analysis. However, Vukmir (2016: 24) notes that there are significant regional and geographic variations in the behaviours described. This underscores the need to develop a definition of DBs that takes into consideration the values, culture and perceptions of the healthcare setting concerned (ILO *et al.* 2002: 1; Berman-Kishony and Shvarts 2015: 1). By carrying out this study, insights into what constitutes DBs in the researcher’s situation were obtained.

One of the most important ways of making radiographers aware is by having education or training on how to deal with DBs. Most managers agree that for them to effectively deal with DBs in their respective departments, they need extra training in Human Resource Management. They argue that the radiography course focuses more on technical proficiency and the humanistic aspect is usually overlooked. These findings are in harmony with the literature. Studies indicate that leaders might be unwilling to challenge persons who are disruptive because they might not have the knowledge to deal with the issue (Longo 2010: 4; Health Quality Council of Alberta 2013: 15; Vukmir 2016: 62; Kisner 2018: 36). It is not a topic taught in training programs, so leaders may hesitate to take on a problem for which there is no obvious solution (Hickson *et*

al. 2007: 1041; Institute for Safe Medication Practice 2013: 2). This therefore emphasises the need to educate or train both managers and radiographers in HMP on human resources issues.

Lastly, the qualitative findings note that radiographers need to develop emotional intelligence. With emotional intelligence, radiographers can comprehend, use and manage their own emotions in positive ways to relieve stress, communicate effectively, empathize with others, overcome challenges and neutralize conflict in the workplace. A number of studies have reported that the development of emotional intelligence in the workplace may lessen the occurrence of DBs (Felblinger 2009: 13; Vassey *et al.* 2010: 1330; Oliveira *et al.* 2016: 697), which is also congruent with the findings of this study.

8.4.5.2 Willingness to address DBs

The qualitative findings indicate that for DBs to be mitigated, there should be a deliberate attempt to tackle the problem from all concerned stakeholders. One of the ways in which stakeholders may commit to deal with DBs is by ensuring adequate and efficient communication between all the concerned parties. Proper communication was identified as one of the factors that can be used to mitigate DBs involving radiographers. The majority of RMs commented that radiographers, doctors, nurses and patients must communicate efficiently and sufficiently with each other in order to avoid barriers that would be created by mis-communication, leading to conflict. Indeed, there was also significant agreement in the quantitative strand that differences in communication styles elicited DBs. These findings are in harmony with the literature. For instance, Oliveira *et al.* (2016: 697) assert that poor communication can lead to personality conflicts, which provoke DB. To be precise, poor communication skills can influence other causes or triggers of DBs, and it is therefore considered one of the most significant associated factors. A study in China investigating hospital staff, although excluding radiographers, determined that 93.0% of DBs were related to inadequate communication between hospital staff and patients (Cai *et al.* 2010: 312). Another study by Lux *et al.* (2014: 37)

exploring DBs involving nurses suggested educational strategies that concentrated on communication skills for professional practice.

8.4.5.3 Conflict resolution

This aspect is concerned with how leadership facilitates the peaceful ending of conflict and retribution, with both parties being satisfied that justice has been done. In-depth interviews reveal that RMs believe in solving the conflict harmoniously within the department first, before reporting to structures outside the department. Radiography managers believe that listening and understanding from both feuding parties will help in solving the conflict. A conflict solved sets a precedence and hence instils confidence in the radiographers that if an incident is reported, they will get justice. However, in cases where organisational remedies fail, for example in the case of very powerful specialists or if it involves very senior people in the organisation, then RMs suggest employing remedies that are from outside the organisational establishment, e.g. professional boards or pro-women organisations.

A number of studies in literature underscore the importance of conflict resolution as a strategy to mitigate DBs in healthcare (Levin *et al.* 2003: 31; Grissinger 2017: 75; Willis *et al.* 2018: 1640; Raso 2019: 22; Rehder *et al.* 2020: 25), which is similar to the findings of the current study. Johnson (2011: 55) asserts that ongoing DBs must be addressed, which could take the form of conflict resolution. However, conflict resolution should be accompanied by team-building exercises to foster improved professional interactions. Vukmir (2016: 85) further affirms that conflict resolution is an efficient and effective way to mitigate DBs. Furthermore, the cornerstone of success in conflict resolution is to arrive at a mutually agreeable solution, not a one-sided approach to the problem. On the other hand, Grissinger (2014: 7) argues that an escalation policy must be established to manage conflicts when the standard communication process fails to resolve a dispute. Healthcare workers must know who to call for help in getting a fair resolution. Organisations should ensure that the conflict resolution process provides an avenue for resolution

outside the typical chain of command in case the conflict involves a subordinate and his or her supervisor.

8.5 CONNECTIONS TO THE AL THEORETICAL FRAMEWORK

The AL model as described by Hystada *et al.* (2013: 42) was chosen as framework for this study over other leadership theories like the LMX. This framework postulates that AL exerts an influence on the safety environment both directly and indirectly through a set of psychological qualities of workers collectively termed 'psychological capital', as illustrated in Figure 8.1 below. A detailed description of the model has been given in Chapter 3. This model has been applied in hazardous work settings (Safety-Critical Organisations) like the gas, oil and shipping industries with evidence of success. These work settings have been characterised as having high potential for stress, accidents, injuries and several adverse health outcomes (Borgersen *et al.* 2014: 435). The theory is pertinent to radiographers because their workplace is similarly stressful and demands high safety standards. Radiographers use harmful radiation in executing their duties and have to deal with rapidly changing technological and human challenges on a daily basis (Adams and Smith 2003: 198). Hence, psychological capital cannot be ignored. Certainly, safe work operations exceed technical improvements, safety protocols and standard operating procedures, but must also include the psychological environment (International Association of Oil and Gas Producers 2013: 2). The similarities between safety critical organisations and radiography work settings provided support for the use of the AL theory when considering the creation of healthy radiography work environments in HMP. This study represents the first to apply this framework in a healthcare environment i.e. radiography.

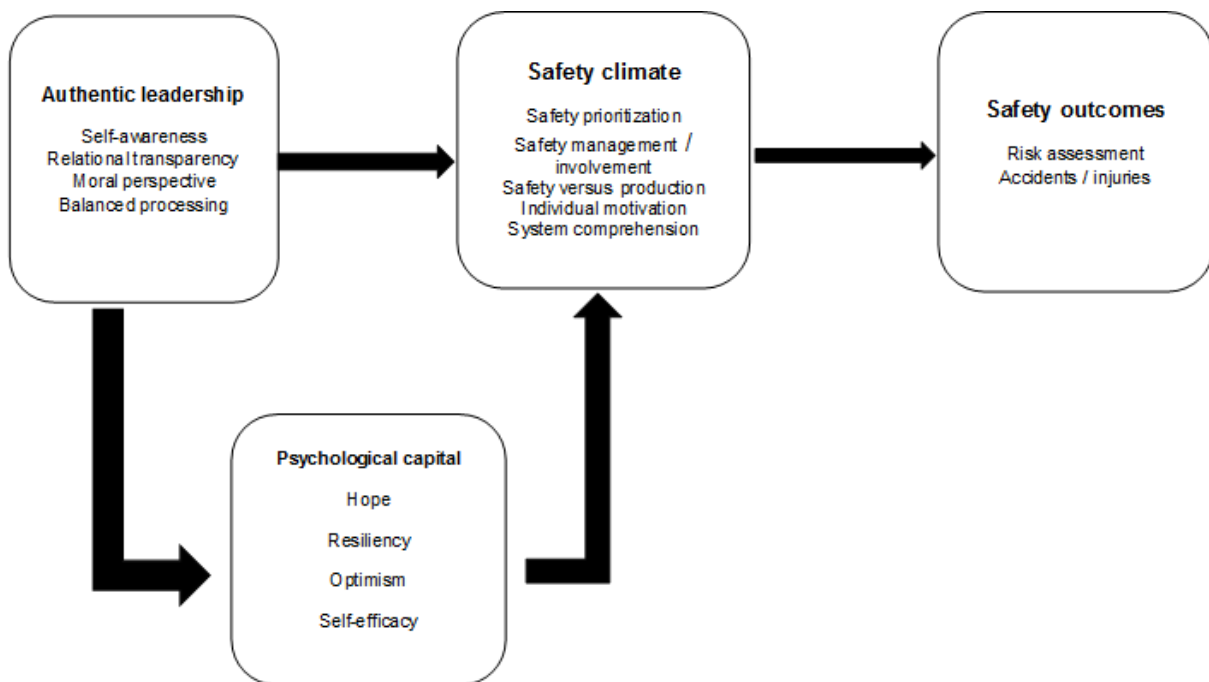


Figure 8.1: Theoretical framework showing relations between AL, psychological capital, safety climate and safety outcomes

Other similarities were noted between the framework and this study. Primarily, with respect to radiation protection, authentic radiography leaders would be expected to put priority on the health and safety of radiographers and patients, as well as the organization as a whole, and reflect these priorities in their behaviours and statements. Through role modelling and social identification processes, authentic RMs may influence radiographers in their unique settings to adopt similar attitudes and behaviours (The Joint Commission 2017: 2). The results of this study confirmed this when qualitative data indicated that RMs should be exemplary in the way they interface with colleagues, patients and the general public. Radiography Managers should also lead by example, especially when it comes to radiation protection and safety issues, as the subordinates will usually learn by imitating. Hystada *et al.* (2014: 42) suggest that these processes of AL will also encourage more productive leader-follower exchanges. In radiography, this should lead to an increased focus on radiation safety through higher levels of collective work ownership and engagement, and a stronger commitment to patient radiation protection.

As regards safety in the work environment, the enthusiasm of individual radiographers to engage in safe behaviours includes their knowledge about radiation protection procedures and willingness to abide by safety protocols and codes of practice. This study's findings are also consistent as they highlight that work environment factors like remuneration, burnout/fatigue or career progression opportunities can significantly affect the enthusiasm of radiographers to implement or prioritize safety (Section 5.4 and 6.3.2.2). From this, it is reasonable to conclude that psychological capital, *self-efficacy*, *hope*, *optimism* and *resiliency* could be mediating variables in the relationship between leadership and radiation protection and safety, serving to increase positive emotional states and attitudes that will foster compliance and participation in radiation safety protocols and activities (Neal and Griffin 2009: 15; Walumbwa *et al.* 2014: 90). In an establishment with a strong safety culture, staff in the organization treat one another and their patients with dignity and respect. The organization is also characterized by a workforce that is productive, learning, engaged and cooperative (The Joint Commission 2017: 2). Other similarities noted include self-awareness and balanced decision-making.

Self-awareness is the first fundamental component of AL, meaning that the authentic leader self-mirrors regularly and is conscious of his/her values, beliefs, strengths and weaknesses (Avolio and Gardner 2005: 315). The results from this study are analogous as RMs emphasized the need for leaders to develop emotional intelligence. According to this study's findings, leaders need emotional intelligence so that they can comprehend, use and cope with their own emotions in positive ways to relieve stress, communicate effectively, empathize with others, overcome challenges and neutralize conflict in the workplace (Section 6.3.1.2).

Balanced decision-making, on the other hand, suggests that authentic leaders factually search for and pay attention to all team members' viewpoints. Conflict resolution and decision-making are done in a balanced manner without emotions getting in the way. The balanced authentic leader is also

behaviourally consistent and there is an absence of workplace drama (Alexander and Lopez 2018: 38; Bergstedt and Wei 2020: 48). Conflict resolution was identified as a mitigatory strategy to DBs by the qualitative data (Section 6.3.2.1). Radiography Managers believe that listening and understanding from both feuding parties will help in solving the conflict (Section 6.3.2.3). The results of the current study therefore aligned with the AL theory that balanced decision-making is crucial in mitigating DBs. However, findings in this study also found that sometimes it may be difficult for managers to be behaviourally consistent, for example, if DBs involve a higher-ranking manager or revenue-generating doctor in the organisation. Hence the need to employ strategies from outside the organisational establishment.

8.6. EXTENDING THE AL THEORETICAL FRAMEWORK

As indicated above, the AL theory employed in this study has been applied to safety critical organisations and has not been applied to the healthcare environment. The current study provides new insights into how AL influences radiography by serving to increase positive emotional states and attitudes that foster compliance and participation in radiation protection protocols/procedures and activities. Based on these findings, a modified preliminary AL model that is specific to radiography (**Figure 8.2**) was developed. This model includes significant factors that ensure radiation protection and safety in the radiography environment, as well as the expected safety outcomes. These are slightly different to those encountered in safety-critical organisations, necessitating the modification. For instance, the safety outcomes in safety critical organisations include accidents and injuries. In the case of radiography, a healthy work environment can influence specific outcomes including:

- Correct patient or anatomy imaged or treated;
- Radiation dose optimisation (ALARA);
- Fewer repeat examinations;
- Fewer radiation effects (both stochastic and deterministic); and
- Patient satisfaction.

Since this model is the first attempt to understand how AL can help create healthy and safe work environments in radiography, more research is needed to further extend these findings to develop a more reliable model.

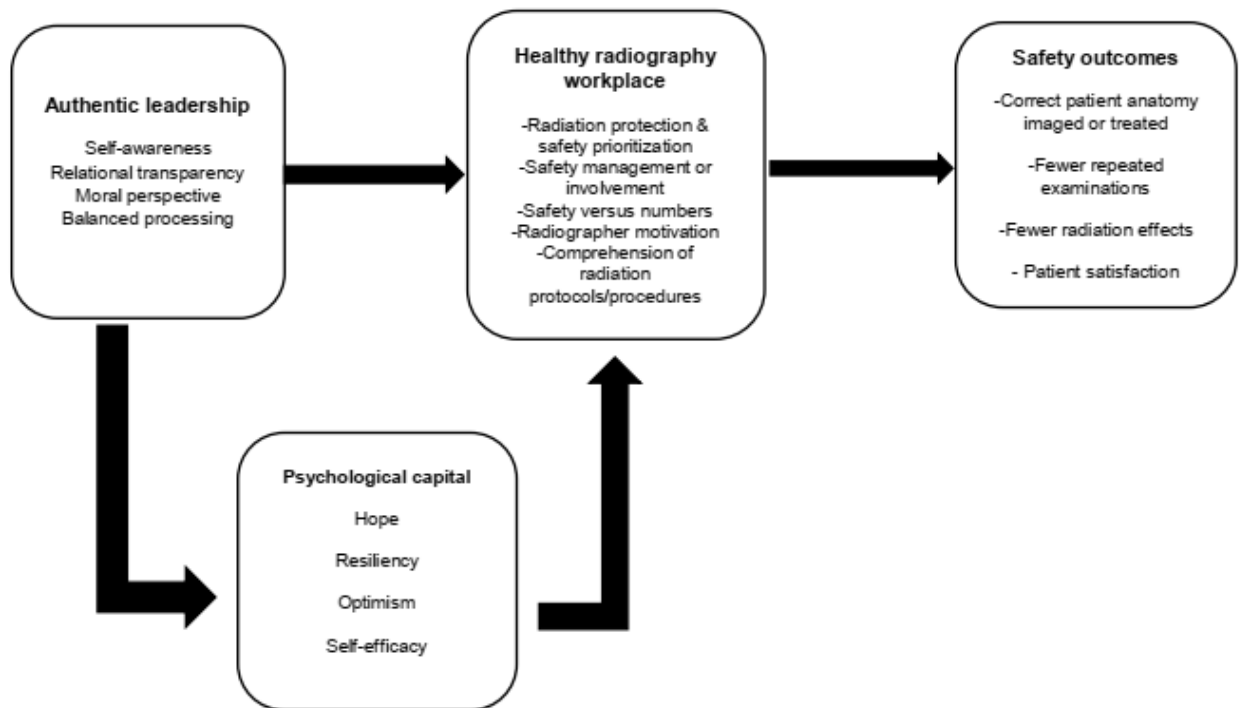


Figure 8.2: Model showing relations between AL, psychological capital, safety climate, and safety outcomes in radiography

8.7 CHAPTER SUMMARY

This chapter has presented a discussion of the findings and related them to the literature. Furthermore, an AL model that considers both the quantitative and qualitative findings was developed. The following chapter presents an evidence-based framework to mitigate DBs based on the findings and literature discussed in this chapter.

CHAPTER 9: DEVELOPMENT OF A FRAMEWORK TO MITIGATE DISRUPTIVE BEHAVIOURS INVOLVING RADIOGRAPHERS

9.1 INTRODUCTION

The purpose of this study was to explore DBs involving radiographers and their consequences on patient safety in order to develop a framework to mitigate these behaviours at central hospitals in HMP. This chapter focusses on the final step of this mixed-methods study. The information presented in the preceding chapters has been on the first four objectives. This section addresses the last objective of this study, which is to:

- *Develop a framework to mitigate DBs involving radiographers employed by central hospitals in HMP*

Utilising the theoretical framework and discussion of the quantitative and qualitative results, a framework to mitigate DBs specific to HMP has been developed. This framework considers DB patterns specific to radiographers at central hospitals in HMP because the design of effective interventions to mitigate these behaviours considers the settings' unique circumstances (Berman-Kishony and Shvarts 2015: 10).

9.2 A FRAMEWORK TO MITIGATE DBs INVOLVING RADIOGRAPHERS EMPLOYED BY CENTRAL HOSPITALS IN HMP

The findings of this study indicate that DBs involving radiographers create an unhealthy work environment that is unfavourable for safe patient care, hence the need to urgently mitigate them. This framework sought to articulate management principles, underscoring prevention and the role of leadership, as well as the need

to empower radiographers to try to resolve interpersonal issues in a positive way. It is anticipated that this framework will help RMs to adopt leadership approaches that promote healthy work environments that permit radiographers to focus on delivering superior, affordable and safe patient care. Similarly, the Radiography curriculum can be informed by the importance of respectful behaviour to patient safety. Furthermore, the framework will similarly be useful to academics who want to study more about these behaviours, particularly within low resource setting healthcare.

Three main categories of causes or antecedents of DBs were established by this study, i.e., organizational or situational, interpersonal and intrapersonal. The researcher therefore proposes a framework that targets these documented categories, as shown in Figure 9.1 below, because the effective intervention of DBs considers the specific antecedents or causes (Vukmir 2016: 23). The framework to mitigate DBs involving radiographers in HMP is described below.

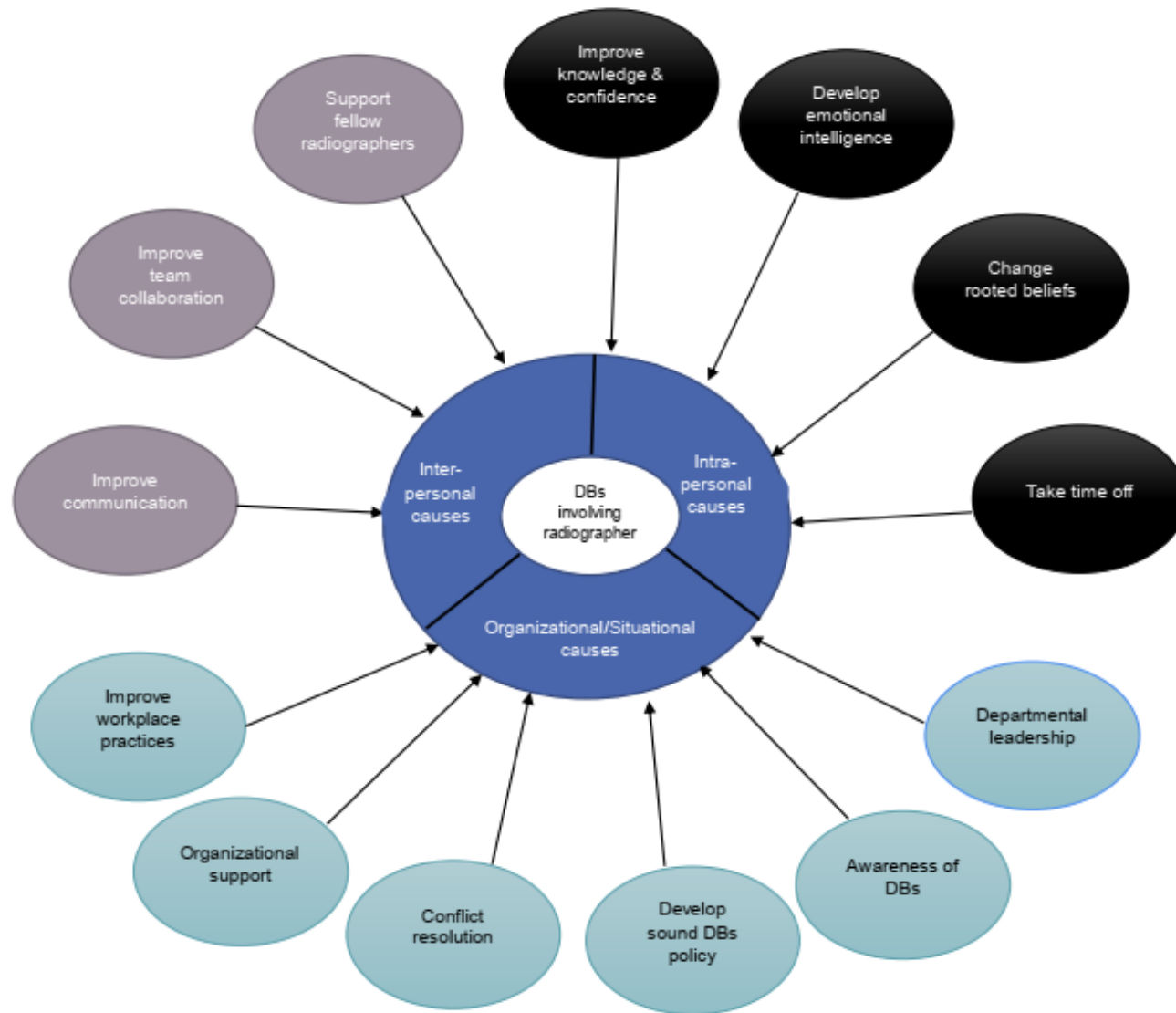


Figure 9.1: Framework to mitigate DBs involving radiographers in HMP

9.2.1 Organisational or situational strategies

The organisational or situational causes of DBS are inherent to the place of work. Findings of the current study indicate that in HMP, these factors played a major role in eliciting DBs involving radiographers. Therefore, high priority is given to the organizational interventions. According to the ILO *et al.* (2002: 19), dealing with the organizational problems at the source typically proves less costly and more effective than increasing the coping ability through interventions at the individual level or intervening in the effects of DBs on the single radiographer. Therefore, strategies considered in this section are directed towards the Radiography workplace in HMP.

9.2.1.1 Departmental leadership

Despite the fact that each person has a part to play, exemplary leadership is fundamental. To effectively mitigate DBs, it is important that the Radiography leadership be dedicated to making it happen. Radiography Managers (chief, principal and senior radiographers) should 'walk the talk' in their actions and behaviour. By doing so, they set the right tone and expectations for their subordinates. Radiography leadership needs to endorse a zero-tolerance approach toward DBs and be prepared to take drastic action when staff refuse to conform to expected behavioural standards. For Radiographers in HMP, behaviour expectations are also set by the Patients' Charter (1996: 1), Health Professions Act of 2004 (Chapter 27: 19), Public Services Act (Chapter 16:04), Radiation Protection Act of 2004 (Chapter 15:15) and the Radiographer's Professional Code of Conduct and Ethics. Furthermore, RMs should adopt Authentic Leadership to mitigate DBs as established by the current study. This management style is founded on transparency, fairness, cooperation, trust, communication and dialogue, in which empathy and respect for the dignity of staff and patients are prioritized (Elkholy *et al.* 2020: 136).

9.2.1.2 Increase awareness of what constitutes DBs

All radiographers and other healthcare workers in HMP should be made conscious about what constitutes DBs and the implications of these behaviours on patient safety. Some radiographers may act disruptively unknowingly, not mindful of the implications of their actions. On the other hand, some radiographers may internalize the incidents, believing that it is part of the job. Therefore, people should be made aware and the DBs must be defined by giving examples of such behaviours. The definitions are imperative since they provide a context that enables radiography leaders to effectively provide a peer review of colleagues and also provide a context for analysis. Awareness of DBs can be done through education, which should occur at different levels:

- i. *Radiography Managers* – this form of education aims to equip leaders with human resources skills. Many leaders bemoan the technical emphasis of radiography training, while lacking the necessary human skills needed in the workplace. The education should describe the DBs, show their impact on the work environment and emphasize why it is important to address them. Each RM should in turn impart that knowledge to their subordinates through departmental meetings. Moreover, hospital websites and magazines may also be used to enhance the knowledge of staff on DB-related issues.
- ii. *Patients* - This study reveals that patients are the main perpetrators of DBs involving radiographers, but they are not in the organisational establishment, thus making their education tricky. Leaders could make use of reminders and posters in the department to make it easy for people to know the expectations of behaviour and know how to deal with incidents of DBs. For example, posters promoting respectful behaviour from both patients and staff may have the following messages “*Respect those who care for you and your loved ones*” or “*Respect – Give it to get it*”. Suggestion boxes should be put in place for patients and family to report incidents anonymously. Lastly, leaflets, brochures and magazines

may be made available in-patient waiting rooms to provide information to patients on handling and reporting DB incidents.

- iii. *Radiography curriculum* – This form of education aims to prepare trainee radiographers on the importance of appropriate and professional behaviour to patient care. Training institutions could find ways to increase the content on the “human” side of the profession, involving the patient encounter and staff working interactions. Communication and Team Collaboration Training should also be part of the training. For example, students should be attached in other clinical departments (pharmacy, nursing, physiotherapy, dental, etc.) so that they appreciate the role of other professions in patient management. This will foster inter-professional collaboration and reduce role conflict.

9.2.1.3 Developing a sound policy to eliminate DB

A clear policy should be delivered from the top management in consultation with all members of staff, recognizing the significance of the fight against DBs. To add weight to the policy, it should contain a declaration showing a genuine commitment to make the issue of DBs a matter of urgency in the organisation. In addition, the policy needs to be integrated and adopted as part of the standard operating procedure (SOP) for the department. The policy should include the reporting procedure for an aggrieved radiographer, as well as an alternative route to by-pass the RMs in case the incident involves the latter. A possibility of engagement with trade unions, professional bodies and pro-women organisations in cases of very powerful individuals in the organisation must be made available. There should be an assignment of responsibility to a team with necessary training for the implementation of the framework. For consistency, the assessment team can meet independently with the victim reporting the incident and the perpetrator to listen carefully to both sides and assess if a violation has really happened. If there is a true violation of the policy, an intervention in which the emphasis for corrective action needs to be placed on the behaviour and not the person may be necessary. During the hearing, an

important link must be made between the DBs and the potential compromise in patient safety. It is crucial that privacy and confidentiality are maintained during the process. However, just having a DB policy alone may not be enough, but there should be consistent application and follow through.

9.2.1.4 Conflict Resolution

Leadership should facilitate the peaceful ending of conflict and retribution with both parties being satisfied that justice has been done. One cause of frustration for victims is the perception that there is nothing being done to address a reported incident of DB. A conflict solved sets a precedent and hence instils confidence in the radiographers that if an incident is reported, they will get justice. The hallmark of successful conflict resolution is to reach a mutually agreeable solution, not a biased approach to the problem. According to Vukmir (2016: 84), this process necessitates three important phases: (1) differences in beliefs amongst the parties must be initially addressed; (2) efficient communication styles must be made to guarantee that all stakeholders contribute equally to the dialogue; and (3) everybody must pledge to a mutually satisfactory resolution of the issues in play. Once these tasks are achieved, the group's ability to move on is probable.

9.2.1.5 Organisational support

Organisational support may come in different forms. The organisation should be able to support staff in terms of:

- career progression,
- adequate staffing,
- a flexible duty roster and
- assistance programs to deal with stress.

In terms of career progression, the RM should encourage subordinates to advance their academic qualifications so that they increase their competencies. Skilled workers are more confident with their work and the breakdown of machines is minimized. The selection of those going on manpower

development should be consistent and fair. Secondly, there should be adequate staffing in terms of numbers, especially during peak times and night duty to prevent burnout/fatigue. Thirdly, RMs should allow subordinates to come up with a flexible duty roster that suits their needs in terms of balancing work and rest. A flexible work schedule may increase radiographer retention and work engagement (ILO *et al.* 2002: 20). Lastly, the organization can use various tools that are existing to measure employee welfare and burnout degrees and help determine the factors producing it. Tools that may be used include the Mini Z Burnout Survey (developed by the American Medical Association) or the MBI: Human Services Survey for Medical Personnel. Organisational support increases the citizenship behaviour of radiographers, leading to less workplace conflict (Raso 2019: 20).

9.2.1.6 Improving workplace practices

Radiography Managers should always strive to ensure that they constantly improve their workplace practices in terms of radiography service delivery. Strategies that can be employed include:

- Ensuring that the volume of patients and the queues in the department are well managed to prevent overcrowding;
- Patient flow and the booking of examinations should be tailor-made to suit available needs and resources;
- Transport should be provided for radiographers on call;
- Machines are serviced on a periodic basis to prevent frequent breakdowns as this increases the demand for the service when machines start working again; and
- Radiographers on call, especially females, should always work in pairs or have security personnel in close proximity.

9.2.2 Interpersonal strategies

The interpersonal causes of DBs occur between individuals in the radiography workplace. Strategies in this segment are directed at mitigating unprofessional behaviours that are caused by factors between individuals.

9.2.2.1 Improve communication

Findings of this study indicate that poor or inadequate communication is often the cause of misunderstandings and DBs. Poor communication between healthcare workers damages inter-professional collaboration, which is critical for patient safety. If the inadequate communication occurs between radiographer and patient, then a conflict may arise, leading to compromised care and satisfaction. Grover (2005: 178) lists eight basic communication skills that are necessary in the healthcare environment, namely:

- a. Listening actively to what the other person is saying;
- b. Asking open-ended questions to understand the information deeply;
- c. Asking closed-ended questions to verify facts;
- d. Clarifying to prompt more information from the interaction;
- e. Paraphrasing to assist in understanding the message;
- f. Using facilitators like nodding to encourage sharing more information;
- g. Assessing non-verbal cues because they relay a great deal of information; and
- h. Silence to encourage speakers to think and share feelings.

However, with regard to communication with patients and their escorts, the provision of well-timed information is critical in minimising the risk of verbal abuse and attacks. This is mainly the case in circumstances involving pain and long waiting times. For example, if an emergency needs to cut the line to be served immediately or in the case of long examinations. Public hospitals are notorious for long waiting queues and overcrowding for patients. The results of this study listed frustration due to long waiting times for patients as one of the triggers of DB. Hence, keeping the patients and their escorts updated about what is going on will go a long way in reducing confrontation.

9.2.2.2 Improve team collaboration

Radiographers are a part of collaborative inter-professional teams, including radiologists, oncologists, surgeons, nurses, etc. However, this collaboration is often considered as a “structural antecedent to conflict” (Patton 2019: 2). One

way to foster inter-professional collaboration is to create a chance for the professionals to get to know each other. Several strategies can be used, both formally and informally. Formally, inter-professional meetings can be organised to discuss responsibilities, roles, perceptions and assumptions or team building exercises. On the other hand, informal get-togethers include sports and lunch time church gatherings. These activities will do a lot to encourage mutual understanding and respect between professionals.

9.2.2.3 Support fellow radiographers who are victims of DB

Radiographers can also support colleagues who are targets of DB. Paying attention to the stories of colleagues will allow those who have been exposed to DBs to express their emotions and perhaps re-think the situation so that they are prepared to challenge it through conversations. Nurses have used a strategy called a “Code Pink” or a “Code Bully” to show support for their colleagues (Namie and Namie 2009: 95). The same strategy can be adopted by radiographers. If a radiographer is being shouted at by another healthcare worker, a code can be called by word-of-mouth or by a more formal method, and the radiographers can unify by physically standing behind the radiographer in order to let the perpetrator know that the DB is intolerable. When this happens, disruptive persons realize they are facing a group of people rather than an individual, and a power shift happens. Sometimes this power shift is adequate to stop the incident of DB (Longo 2010: 4).

9.2.3 Intrapersonal strategies

The intrapersonal antecedents of DBs are present within the individual. Mitigation strategies at the intrapersonal level are mainly focused on developing the knowledge, attitudes and skills required to contribute to a healthy workplace, and the confidence to follow through in a courteous and positive way when DB occurs. Therefore, the strategies considered below emphasize the modification of the behaviour of individual radiographers in HMP.

9.2.3.1 Improve knowledge and confidence

The first step to mitigating DBs should begin within the individual. Radiographers need to intentionally develop the knowledge or skills required to confront DBs and to report any violation of the policy. This may include familiarising with the organisational policy on DBs and other legislation that governs their work environment. As the old adage attributed to Francis Bacon goes, "*Knowledge is power*". Having the necessary information empowers individuals to make informed decisions about behaviours that affect them in the workplace. Secondly, another way to deter abuse is to use verbal commands to stop the DB, to announce that a line has been crossed, that one has a rule of zero-tolerance for such inappropriate behaviour and that it will be reported. It is important for radiographers to know that no matter what power an individual has in relation to them, there are still boundaries they should not intrude upon. On the other hand, radiographers should improve their professional competency and assertiveness so that they are given the necessary respect by other healthcare professionals. There is a reported culture of apathy and obsequiousness predominant in the Radiography profession, mainly due to the background of medical dominance. It is time for radiographers to stand up and insist on being counted, respected and having a profile as health professionals, rather than being seen as 'allied health technicians' (Yielder 2014: 64). This all starts with each individual radiographer.

9.2.3.2 Develop Emotional Intelligence

The Institute for Health and Human Potential (2019: para. 1 line 1) describes emotional intelligence (EI) as "being aware that emotions can drive our behaviour and impact people (positively and negatively), and learning how to manage those emotions — both our own and others — especially when under pressure". EI and communication are evidently connected. Due to this link, EI has been called "one of the largest drivers of patient safety" (Codier and Codier 2015: 112). Because EI affects patient safety, there is need for radiographers to develop it. The University of New Mexico College of Nursing (2020: para 3 line 1) claims that developing EI is like learning a clinical skill. For instance,

radiographers can improve clinical skills like performing a chest x-ray. They offer the following suggestions:

- Carry out a quick self-assessment. **Mind Tools** provides a free, quick and easy assessment with score interpretation and tips for improving.
- Self-reflection after a challenging situation. Ask questions such as, *"How did that happen?"*, *"How was I feeling?"*, *"What made me feel that way?"* *"Was I able to listen without judging?"*, *"Was I able to comprehend the next person's perspective?"*
- Attempt simple mindfulness practices. Slow deep breaths can reduce stress.
- Learn and practice assertive communication.

9.2.3.3 Change rooted beliefs and personal values

The individual radiographer should strive to change deep-rooted beliefs that influence their behaviour in the workplace. For example, the gender hegemonic norms that are entrenched due to society. The approach that can be adopted by RMs is to encourage critical reflection, questioning and challenging of gender norms in the workplace.

9.2.3.4 Take some time off

Radiographers can take some time off to recharge and come back to the pre-stress level of performance after a serious incident of DB. It is also important to assess one's mental health with a mental health professional if the need arises. Taking time off will help the radiographer relax and unwind so that they come back to work feeling re-invigorated and ready to perform at their best.

9.3 CHAPTER SUMMARY

The successful mitigation of DBs is important in the creation of a healthy work environment, which permits radiographers to focus on delivering superior, affordable and safe patient care. This chapter outlined a framework to mitigate DBs that is tailored to the researcher's setting. It is hoped that this framework

will assist RMs to effectively dealing with these behaviours in their respective constituencies. The next chapter presents the summary, recommendations, limitations and conclusion of this study.

CHAPTER 10: SUMMARY, RECOMMENDATIONS, LIMITATIONS AND CONCLUSIONS

10.1 INTRODUCTION

The previous chapter presented a framework to mitigate DBs, developed based on the findings of this study. This chapter presents the summary, strengths, limitations, recommendations and conclusions resulting from exploring DBs involving radiographers and their consequences at central hospitals in HMP. This study has contributed towards creating healthy radiography work environments in HMP by providing a framework to mitigate DBs. It is anticipated that this information will help RMs to develop leadership strategies that encourage a tranquil work atmosphere that allows radiographers to focus on providing superior and safe patient care.

10.2 SUMMARY OF STUDY

Healthcare workers experience 5-12 times the estimated numbers of DBs compared with other workers overall. The problem of DBs in healthcare has become a global concern due to their negative impact on patient safety. However, most studies have explored these behaviours from the perspectives of nurses and physicians in high resource settings. Radiographers in low resource settings use hazardous radiation in the execution of their duties with inadequate resources, making patient safety of utmost concern. The rationale for this study was therefore to explore this topic in low resource setting radiography (i.e., at central hospitals in HMP, Zimbabwe), which is under-represented in the literature. In addition, the study sought to develop a tailor-made framework to mitigate these behaviours. This study was vindicated as there is currently no policy or procedure for mitigating DBs involving radiographers in Zimbabwe. The findings in relation to the research questions allowed the development of a framework to mitigate DBs involving radiographers in HMP. A mixed-methods convergent parallel approach using

the parallel databases variant was employed. Disruptive behaviours from 100 randomly sampled radiographers were evaluated using a semi-structured questionnaire. In addition, in-depth interviews were carried out with 11 RMs selected by criterion purposive sampling in order to explore strategies to mitigate these behaviours. The study was guided by the following research questions:

Main question

- What would constitute a framework to mitigate the consequences of DBs in low resource setting radiology departments?

Sub-questions

- Which DBs involving radiographers impede a safe work environment at central hospitals in HMP?
- What are the causes of DBs involving radiographers employed by central hospitals in HMP?
- What are the environmental and cultural factors to mitigate DBs involving radiographers at central hospitals in HMP?
- Which strategies can be used to mitigate DBs involving radiographers in central hospitals in HMP?

A summary of the findings according to the research questions is given below.

10.2.1 DBs involving radiographers that impede a safe work environment at central hospitals in HMP

The data showed that 83% of radiographers had been exposed to an incident of DB in their workplace, while 74% had witnessed an incident involving a radiographer in the preceding 12 months. The reported types of DBs involving radiographers included: Verbal abuse (81%), sexual abuse (21%) and physical abuse (4%). Of the 21 radiographers that suffered sexual abuse, the majority 71 % (n=15) were female, while 29% (n=6) were males. A calculation of the prevalence odds ratio revealed that female radiographers were 1.8 times more

likely than their male counterparts to be victims of workplace sexual abuse (95% C.I.: 0 – 3.04). A significant 69% had been abused by a family member or escort of a patient, $p=.001$. Radiographers abused by fellow radiographers, senior management and doctors were 31.3%, 30.1% and 30.1% respectively.

10.2.2 Causes of DBs involving radiographers

There was significant agreement that the following are triggers of DBs: frustration due to poor working conditions ($M=3.93.p<.0005$); long waiting times for patients ($M=3.91.p<.0005$); a sense of privilege and status for those at the top ($M=3.87.p<.0005$); burnout or fatigue ($M=3.79.p<.0005$); narcissism ($M=3.79.p<.0005$); differences in communication styles ($M=3.68.p<.0005$); divergence of opinions or thoughts (e.g. differing views as to how a procedure should be carried out) ($M=3.59.p<.0005$); personal conflicts or family problems ($M=3.57.p<.0005$); self-protection against feelings of inadequacy ($M=3.42.p<.0005$); dysfunctional organizational culture (e.g. the organisation is not effective in ensuring patient or employee safety) ($M=3.38.p<.0005$); and cultural, generational or gender bias ($M=3.32.p<.0005$). There was however no significant agreement or disagreement that substance abuse by any of the parties ($M=3.15.p>.0005$) and psychiatric disorders ($M=3.03.p>.0005$) were the triggers of DBs.

10.2.3 Consequences of DBs involving radiographers

There was significant agreement that the following are the consequences of DBs involving radiographers from greatest to the least: DBs create an unhealthy or hostile work environment ($M=5.36.$), $p<.0005$; DBs are a threat to the image of the organization ($M=5.24.$), $p<.0005$; DBs cause the recipient to experience fear, anger, shame and confusion ($M=5.21.$), $p<.0005$; DBs can affect optimum execution of duties as a radiographer ($M=5.19.$), $p<.0005$; DBs can negatively affect collaboration in the radiology department ($M=5.01$), $p<.0005$; DBs undermine patient confidence, making patients less likely to ask questions ($M=4.99.$), $p<.0005$; DBs impact negatively on organizational culture ($M=4.97.$), $p<.0005$; DBs lead to compromised patient satisfaction ($M=4.95.$), $p<.0005$;

DBs lead to compromised patient safety ($M=4.72$), $p<.0005$; DBs can affect the way I implement radiation protection protocols and procedures ($M=4.42$), $p<.0005$; and DBs increase radiographer resignations and absenteeism ($M=4.40$), $p<.0005$.

10.2.4 Environmental and cultural factors to mitigate DBs at central hospitals in HMP

This theme relates to the environmental and cultural factors specific to HMP that must be considered when formulating strategies to mitigate DBs involving radiographers. It includes the sub-themes of power hierarchy, work environment and reporting framework.

- i. *Power hierarchy* – This sub-theme encompasses concepts such as superiority, professional boundaries, representation and personalities. It centres on the idea of perceived levels of power within interpersonal interactions. In radiography, those hierarchies present themselves between radiographers on different professional ladders; between radiographers and other healthcare workers; and between radiographers and patients or their escorts. There was a link between perceived power and the exhibition of DBs.
- ii. *Work environment* - This sub-theme refers to the surrounding conditions in which a radiographer operates, whether physical or psychological. This sub-theme contains the categories of trust in leadership, equality, burnout and fatigue, remuneration, career progression and psychological evaluations.
- iii. *Reporting framework* - The lack of a deliberate, specific and clear protocol that allows radiographers to report in confidence has been noted by the majority of managers as a factor that may affect the reporting rate of DBs by radiographers. This sub-theme comprises the concepts of a lack of protocol and the reporting culture of radiographers.

10.2.5 Strategies for mitigating DBs in HMP

This theme relates to the experiences of RMs and the strategies they have adopted to mitigate DBs in their respective departments. Furthermore, their opinions and feelings about these behaviours are highlighted so that effective solutions to deal with these behaviours can be established. It comprises three sub-themes, namely awareness of DBs, willingness to address DBs and conflict resolution:

- i. *Awareness of DBs* – This sub-theme centres on the radiographer's consciousness of DBs and their consequences on patient care and radiation safety.
- ii. *Willingness to address DBs* – Willingness centres on the state of readiness to deliberately tackle the problem of DBs involving radiographers in HMP. It includes the categories of communication, taking charge and confidence.
- iii. *Conflict resolution* – This is concerned with how leadership facilitates the peaceful ending of conflict and retribution with both parties being satisfied that justice has been done. It includes the following categories: listen and understand, substitution and external remedies.

10.2.6 A framework to mitigate DBs involving radiographers

The proposed framework identifies the DB antecedents found in the current study (i.e. organisational or situational, interpersonal and intra-personal) and recommends corresponding mitigation strategies. Promoting professional behaviour and consequently creating a culture of radiation protection plus safety in radiography is not possible without a framework for guiding intervention processes, suitable institutional policies, investigation tools, training and accountability to one another. The framework is envisioned to help RMs develop strategies to mitigate DBs and promote the establishment of a healthy radiography workplace in which safe and superior patient care can be provided. It will help RMs in developing departmental policies and practices that enable radiographers to deal with DB at an interpersonal level, and inaugurate

a formal process for addressing ongoing issues. This study further found that having formal policies acts as a deterrent to unprofessional behaviours.

10.3 STRENGTHS OF THE STUDY

The study employed a mixed-methods approach that provided methodological triangulation as both quantitative and qualitative data was gathered. Most studies investigating DBs in the literature either used the quantitative or qualitative approach. Disruptive behaviour is complex, interactive, dynamic and multifactorial in nature, making the phenomenon challenging to analyse or predict. Hence, combining both quantitative and qualitative data allowed to:

- Provide the range plus depth of data necessary to answer the research questions;
- Harness the strengths and offset the shortcomings of both methods; and
- Facilitate the development of results and interpretations that increase understanding, are comprehensive, are authenticated and confirmed.

Furthermore, space triangulation was attained by collecting data from radiographers in the five departments across three different hospitals in HMP. A descriptive cross-sectional survey was used to collect the quantitative data in this study. This approach was chosen because of the need to document the views of as many radiographers as possible about the prevalence, causes and consequences of DBs in their workplaces. By documenting the views of many radiographers, the generalizability of the study was enhanced. On the other hand, one-on one in-depth interviews with RMs were used to collect the qualitative data. The researcher was able to collect rich information from individual RMs because they were able to express their opinions in a relaxed atmosphere. Radiography managers were selected such that their position within the hospital would allow them to provide authoritative and accurate responses about the problem of DBs.

The current study provides a maiden inquiry of DBs involving radiographers in the Zimbabwean setting and may pave the way for more research. In addition, the framework developed will help RMs develop strategies to mitigate DBs and contribute to the creation of a healthy radiography workplace in which safe, superior care can be provided.

10.4 LIMITATIONS OF THE STUDY

Scientific research is not a perfect process and hence, will always have limitations. According to Loannidis (2007: 324), limitations are vital to understand because they place research findings into context; deduce the rigour of the scientific work; and assign a credibility level to the conclusions of the study. The current study has potential limitations, as discussed below.

Primarily, this study employed a self-report design without independently observable behaviours or outcomes. In this case, radiographers were asked to recall incidents that occurred in the last 12 months prior to the study. Nevertheless, self-reported data comprises numerous possible causes of bias that should be acknowledged as limitations. These include: (a) telescoping [remembering incidents that happened at one time as if they happened at another time]; (b) selective memory [recalling or not recalling incidents that happened at some point in the past]; (c) exaggeration [the act of over-emphasizing incidents as more substantial than is actually suggested from other data]; and (d) attribution [the act of attributing positive incidents to one's own agency, but attributing negative events and outcomes to external forces] (Sacred Heart University 2020: 1). However, limiting memory to the preceding 12 months has been used successfully by other studies of DBs in the general literature (Sisawo *et al.* 2017: 19; Hattingh *et al.* 2019: 17). It is also important to admit that this study investigated DBs based on insights of radiographers (i.e. questionnaires and interviews) and hence, the results do not go beyond participants' perceptions.

Secondly, resource constraints and time limited participation to only radiographers at central hospitals in HMP, Zimbabwe. Consequently, these results may not be generalized to the private and any other groups of public healthcare institutions in Zimbabwe. However, central hospitals in Zimbabwe represent the largest healthcare centres and appear particularly susceptible to incidents of DBs due to the large volumes of patients and shortage of resources.

10.5 RECOMMENDATIONS

The following recommendations are given as established by the current study:

10.5.1 Professional associations and regulatory entities

Professional associations and regulatory entities in Zimbabwe should take a zero-tolerance stand against DBs by formulating new moral codes, standards and practice guidelines.

10.5.2 Modification of the curricula

Training colleges may need to modify their curricula to ensure that radiographers are conscious of the issues raised in the current study. The trainees should be taught how to evade and deal with DBs.

10.5.3 Community awareness programmes

Mass communication media could be employed in increasing awareness of the community on the negative impacts of DBs and how the whole society suffers on account of that.

10.5.4 Prompt reporting of incidents

Radiographers should also be encouraged to report every DB incident against them promptly and such reports must be acted on immediately so that radiographers come to understand that such reporting is essential and is not in vain.

10.5.5 Further research

One avenue to further improve the validity of the study would be to assess DBs with validated tools and methods, relying on a methodical analysis of institutional reports or observations. Further investigation is needed to compare the prevalence of DBs involving radiographers in the public and private sector or any other groups of public healthcare institutions. A large study involving all healthcare workers in Zimbabwe may be necessary to ascertain whether they have similar perceptions about DBs in their respective work settings. Further research should assess if the proposed interventions directed at mitigating DBs lead to healthy work environments and improved patient safety. Additional inquiry is needed to determine if efforts on team building, improved emotional intelligence, improved communication, resilience interventions and conflict resolution approaches will lead to a decline in the incidents of DBs. Another future direction for the study may include repeating the quantitative strand of data collection to more precisely trend DB incidence over time, rather than just at a snapshot. Another study design may be necessary to allow for the separation of cause and effect between DBs and other culture provinces in Zimbabwe. The current study did not fully investigate the influence of national by-laws on the behaviour of healthcare workers. Further research may be directed towards documenting more evidence in that regard. Additional research is needed to develop a more reliable AL model than was proposed by the current study.

10.6 CONCLUSION

A tailor-made framework to mitigate DBs involving radiographers in HMP is crucial as these behaviours have a negative influence on patient radiation protection and safety. Mitigation of DBs creates a healthy work environment that allows radiographers to focus on delivering safe patient care. The implementation of radiation protection and safety practices in radiography up to now have been done from a technical perspective, for example, the use of dose reference levels and exposure indicators. However, the technical approach does not answer all questions related to radiography practice, in particular, the “human” side of the profession involving the patient encounter and staff working interactions. There is already significant research indicating that human factors such as DBs and leadership can have a profound impact on patient safety. When professionals fail to address the dynamics of DBs, then patient safety will continue to be compromised. The next main challenge in safety research is to assess plus mitigate the human behavioural factors and processes that undermine patient safety.

The current study contributed to the creation of healthy radiography environments at central hospitals in HMP by developing a specific framework to mitigate DBs. The study also provides baseline information for further studies that seek to investigate these behaviours in Zimbabwe and other low resource settings. Finally, the study allowed the researcher to modify and extend the AL model so that it can be applicable to radiography work environments.

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APPENDICES

Appendix 1: University's ethics clearance.



Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Berwyn Court
Gate 1, Steve Biko Campus
Durban University of Technology
P O Box 1334, Durban, South Africa, 4001
Tel: 031 373 2375
Email: levithad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics
www.dut.ac.za

3 February 2021

Mr B Chinene
16422
Sunningdale 2
Harare
Zimbabwe

Dear Mr Chinene

Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan province, Zimbabwe
Ethical Clearance number IREC 097/20

The Institutional Research Ethics Committee acknowledges receipt of your notification regarding the piloting of the data collection tools.

Kindly ensure that participants used for the pilot study are not part of the main study.

In addition, the IREC acknowledges receipt of your gatekeeper permission letters.

Please note that **FULL APPROVAL** is granted to your research proposal. You may proceed with data collection.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the IREC according to the IREC Standard Operating Procedures (SOP's).

Please note that any deviations from the approved proposal require the approval of the IREC as outlined in the IREC SOP's.

Yours Sincerely,

—

Professor J K Adam
Chairperson: IREC

Appendix 2a: Letter of request for gatekeeper permission from the Zimbabwe Ministry of Health and Childcare

16422 Sunningdale 2
Harare
Zimbabwe
[Date]

The Permanent Secretary
Ministry of Health and Childcare
4th Floor Kaguvi Building
Harare

Request for Permission to Conduct Research

Dear Sir/Madam

My name is Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves *“Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe”*.

I am hereby seeking your consent to collect data for the study from radiographers who work at Central Hospitals in the Harare rural district. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. To achieve this a survey consisting of 100 randomly sampled radiographers will be asked to complete a questionnaire. In addition, a minimum of three (one from each central hospital) purposively sampled radiography managers will be asked to participate in face to face interviews.

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact my supervisor, Dr Nkosi on paulinen1@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

.....
Bornface Chinene
Durban University of Technology
Cell number: 0773270576
Email: bchinene@hit.ac.zw

Appendix 2b: Approval letter from the Zimbabwe Ministry of Health and Childcare

Telephone: +263-4-798620

All correspondence should be addressed to the Secretary for Health and Child Care



Reference:
Ministry of Health and Child
Care
P O Box CY1122
Causeway
HARARE

19 October 2020

Bornface Chinene
16422 Sunningdale 2
Harare

Dear Mr. B. Chinene

RE: APPLICATION FOR PERMISSION TO CARRY OUT RESEARCH (PhD) IN THE MINISTRY OF HEALTH AND CHILD CARE.

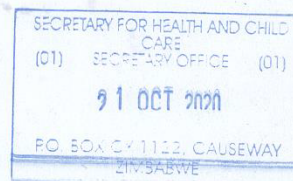
Your letter dated 25th September 2020 refers.

It is noted that you applied for permission to carry out an academic research for your PhD programme with the Durban University of Technology in the Ministry of Health and Child Care. The title of your Doctoral thesis is "A framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province (HMP), Zimbabwe". Your research seeks to explore disruptive behaviours involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted.

Your application is approved on condition that you obtain Medical Research Council of Zimbabwe ethical approval before the implementation of the study. Also note that you will be requested by the Secretary for Health and Child Care to share your findings with MoHCC in the form of presentation or written report during the course or on completion of your study.

Kindly submit a copy of the MRCZ ethical approval for this project to the Ministry of Health and Child Care. Address your communication to Prof. Nicholas Midzi (Director National Institute of Health Research) at midzinicholas@gmail.com, Cell No. 0785023912.

Air Commodore Dr J. Chimedza
SECRETARY FOR HEALTH AND CHILD CARE



Appendix 3a: Letter of request for gatekeeper permission from the Medical Research Council of Zimbabwe (MRCZ)

16422 Sunningdale 2
Harare
Zimbabwe
[Date]

The Medical Research Council of Zimbabwe
Mazowe St
Harare

Request for Permission to Conduct Research

Dear Sir/Madam

My name is Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves *“Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe”*.

I am hereby seeking your consent to collect data for the study from radiographers who work at Central Hospitals in the Harare rural district. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. To achieve this a survey consisting of 100 randomly sampled radiographers will be asked to complete a questionnaire. In addition, a minimum of three (one from each central hospital) purposively sampled radiography managers will be asked to participate in face to face interviews.

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact my supervisor, Dr Nkosi on paulinen1@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

.....
Bornface Chinene
Durban University of Technology
Cell number: 0773270576
Email: bchinene@hit.ac.zw

Appendix 4a: Letter of request for gatekeeper permission from the South Western District.

16422 Sunningdale 2
Harare
Zimbabwe
[Date]

The District Administrator
South Western District
P. Bag 7763
Harare

Request for Permission to Conduct Research

Dear Sir/Madam

My name is Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves *“Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe”*.

I am hereby seeking your consent to collect data for the study from radiographers who work at Central Hospitals in the Harare rural district. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. To achieve this a survey consisting of 100 randomly sampled radiographers will be asked to complete a questionnaire. In addition, a minimum of three (one from each central hospital) purposively sampled radiography managers will be asked to participate in face to face interviews.

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact my supervisor, Dr Nkosi on paulinen1@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

.....
Bornface Chinene
Durban University of Technology
Cell number: 0773270576
Email: bchinene@hit.ac.zw

Appendix 4b: Approval letter from the South Western District

**Ministry of Local Government and Public Works
HARARE METROPOLITAN PROVINCE**

Telephone: 263 0242
762988

paharare20@gmail.com

04- 799190



The Office of the Provincial Development
Coordinator
P. Bag 7763
Causeway
HARARE
ZIMBABWE

Reference: Cov19

25 September 2020

TO WHOM IT MAY CONCERN

**Re: AUTHORITY TO CARRY OUT A RESEARCH
ENTITLED FRAMEWORK TO MITIGATE DUSRUPTIVE
BEHAVIOURS INVOLVING RADIOGRAPHERS AT CENTRAL
HOSPITALS IN HARARE METROPOLITAN PROVINCE
ZIMBABWE : BORNFACE CHINENE**

This letter serves to confirm that Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology has been granted permission to collect data for research purposes at the following Central Hospitals:

- Sally Mugabe (Harare Central)
- Parirenyatwa Hospital; all in the South Western District.

May you render him the necessary assistance.

Thank you.

N.B. Tagarira
District Development Coordinator
South Western Region



Appendix 5a: Letter of request for gatekeeper permission from the Ruwa-Epworth District

16422 Sunningdale 2
Harare
Zimbabwe

25 September 2020

The District Administrator
Ruwa-Epworth District
Cecil House 95 Jason Moyo Avenue
Harare

Request for Permission to Conduct Research

Dear Sir/Madam

My name is Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves *“Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe”*.

I am hereby seeking your consent to collect data for the study from radiographers who work at Central Hospitals in the Harare rural district. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. To achieve this a survey consisting of 100 randomly sampled radiographers will be asked to complete a questionnaire. In addition, a minimum of three (one from each central hospital) purposively sampled radiography managers will be asked to participate in face to face interviews

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

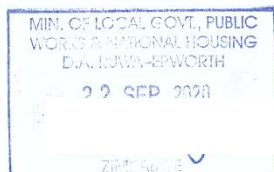
If you require any further information, please do not hesitate to contact my supervisor, Dr Nkosi on paulinen1@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

.....
Bornface Chinene
Durban University of Technology
Cell number: 0773270576
Email: bchinene@hit.ac.zw

Appendix 5b: Approval letter from the Ruwa-Epworth District



16422 Sunningdale 2
Harare
Zimbabwe

25 Sep. 2020

The District Administrator
Harare Northern District
Cecil House 95 Jason Moyo Avenue
Harare

Request for Permission to Conduct Research

Dear Sir/Madam

My name is Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves *"A framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe"*.

I am hereby seeking your consent to collect data for the study from radiographers who work at Central Hospitals in the Harare urban district. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. To achieve this a survey consisting of 100 randomly sampled radiographers will be asked to complete a questionnaire. In addition, a minimum of three (one from each central hospital) purposively sampled radiography managers will be asked to participate in face to face interviews.

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact my supervisor, Dr Nkosi on paulinen1@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,


Bornface Chinene
Durban University of Technology
Cell number: 0773270576
Email: bchinene@hit.ac.zw

Appendix 6a: Letter of request for gatekeeper permission from the Chitungwiza District

16422 Sunningdale 2
Harare
Zimbabwe

25 September 2020

The District Administrator
Chitungwiza District
PO Box CZA70
Chitungwiza
Zimbabwe

Request for Permission to Conduct Research

Dear Sir/Madam

My name is Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves *“Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe”*.

I am hereby seeking your consent to collect data for the study from radiographers who work at Central Hospitals in the Harare rural district. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. To achieve this a survey consisting of 100 randomly sampled radiographers will be asked to complete a questionnaire. In addition, a minimum of three (one from each central hospital) purposively sampled radiography managers will be asked to participate in face to face interviews

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact my supervisor, Dr Nkosi on paulinen1@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

.....
Bornface Chinene
Cell number: 0773270576
Email: bchinene@hit.ac.zw

Appendix 6b: Approval letter from the Chitungwiza District

CHITUNGWIZA DISTRICT		
MINISTRY OF LOCAL GOVERNMENT, PUBLIC WORKS AND NATIONAL HOUSING HARARE METROPOLITAN PROVINCE		
Telephone: 0270-31156 Fax: 070-23337 Reference:		The Office of the Deputy Director Local Governance Chitungwiza District Box ZGZ 83 Zengeza

All correspondence to be addresses to the Deputy Director Local Governance

If calling, please ask for
the Deputy Director ,Ms
Z. Chisango

08 October, 2020

To whom it may concern

**RE: PERMISSION TO CONDUCT RESEARCH: A FRAMEWORK TO MITIGATE DISRUPTIVE BEHAVIO
INVOLVING RADIOGRAPHERS AT CENTRAL HOSPITALS IN HARARE METROPOLITAN PROV
ZIMBABWE**

Reference is made to the afore-cited subject.

This letter serves to confirm that Bornface Chinene is a doctoral student at the Durban Universit
Technology enrolled for a Doctor of Radiography. He is carrying out a research in partial fulfillment of
requirements for this programme.

This office has granted him permission to carry out the afore-cited research topic. May you please assist
with the necessary information he may require.




Deputy Director, Local Governance
Chitungwiza

Appendix 7a: Letter of request for gatekeeper permission from the Parirenyatwa Group Clinical Director

16422 Sunningdale 2
Harare
Zimbabwe
[Date]

The Clinical Director
Parirenyatwa Group of Hospitals
P.O Box CY 198
Causeway
Harare

Request for Permission to Conduct Research

Dear Sir/Madam

My name is Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves *“Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe”*.

I am hereby seeking your consent to collect data for the study from radiographers who work at Central Hospitals in the Harare rural district. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. To achieve this a survey consisting of 100 randomly sampled radiographers will be asked to complete a questionnaire. In addition, a minimum of three (one from each central hospital) purposively sampled radiography managers will be asked to participate in face to face interviews

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact my supervisor, Dr Nkosi on paulinen1@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

.....
Bornface Chinene
Cell number: 0773270576
Email: bchinene@hit.ac.zw

Appendix 7b: Approval letter from the Parirenyatwa Group Clinical Director

All communications should be addressed to
"THE GROUP CHIEF EXECUTIVE"
Telephone: 701520-701554/7
Fax: 706627
Website: www.parihosp.org



PARIRENYATWA GROUP OF HOSPITALS
P.O Box CY 198
Causeway
Zimbabwe

29 September 2020

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH STUDY AT

PARIRENYATWA GROUP OF HOSPITALS : MR CHINENE BORNFACE

The above matter refers.

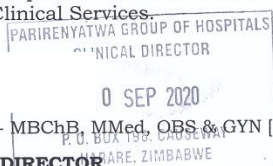
The Parirenyatwa Group of Hospitals hereby grants you permission to conduct research on:-

A framework to mitigate disruptive behaviours involving radiographers at Central hospitals in Harare Metropolitan Province, Zimbabwe.

The permission is granted subject to the following conditions:-

1. The researcher will provide all sundries necessary for sample collections. ☒
2. The researcher sponsors all payments for the tests involved. ☒
3. The hospital incurs no cost in the course of the research. ☒
4. All relevant departments are notified in advance and the Head of section/ward signs acknowledgement of such notification. ☒
5. The conduct of the research does not interfere or interrupt the daily service provision by the hospital. ☒
6. Formal written feedback on research outcomes must be given to the Director of Clinical Services. ☒
7. Permission for publication of research must be obtained from the Director of Clinical Services. ☒

Dr. T. M. MAGURE - MBChB, MMed, OBS & GYN [UZ]
ACTING CLINICAL DIRECTOR



Appendix 8a: Letter of request for gatekeeper permission from the Harare Central Hospital Ethics Committee.

16422 Sunningdale 2
Harare
Zimbabwe

01 October 2020

The Chairperson: Harare Hospital Ethics Committee
Harare Central Hospital
ST 14 Southerton
Harare

Request for Permission to Conduct Research

Dear Sir/Madam

My name is Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves *“Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe”*.

I am hereby seeking your consent to collect data for the study from radiographers who work at Central Hospitals in the Harare rural district. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. To achieve this a survey consisting of 100 randomly sampled radiographers will be asked to complete a questionnaire. In addition, a minimum of three (one from each central hospital) purposively sampled radiography managers will be asked to participate in face to face interviews

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).


If you require any further information, please do not hesitate to contact my supervisor, Dr Nkosi on paulinen1@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

.....
Bornface Chinene
Cell number: 0773270576
Email: bchinene@hit.ac.zw

Appendix 8b: Approval letter from the Harare Hospital Ethics Committee.

<p>Telephone: 621100-19 Fax: 621157</p>	 ZIMBABWE	<p>Reference: HCHEC 081020/47</p> <p>HARARE CENTRAL HOSPITAL P. O. Box ST 14</p> <p>SOUTHERTON</p> <p>Harare</p>
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29 October 2020

Mr. Bornface Chinene
16422 Sunningdale 2
HARARE

Dear Mr. Chinene

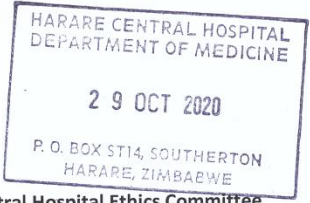
REF: A FRAMEWORK TO MITIGATE DISRUPTIVE BEHAVIOURS INVOLVING RADIOGRAPHERS IN HARARE METROPOLITAN PROVIDENCE, ZIMBABWE

I am glad to advise you that your application to conduct a study entitled: **A Framework to Mitigate Disruptive Behaviours Involving Radiographers in Harare Metropolitan Providence, Zimbabwe (Ref: HCHEC081020/47)**, has been approved by the Harare Hospital Ethics Committee.

This approval is premised on the submitted protocol. Should you decide to vary your protocol in any material way please submit these for further approval.

You are advised to avail the results of your study whether positive or negative to the hospital through the committee for our information.

Yours sincerely,



HARARE CENTRAL HOSPITAL
DEPARTMENT OF MEDICINE

29 OCT 2020

P. O. BOX ST14, SOUTHERTON
HARARE, ZIMBABWE

DR. C. Pasi
Chairman Harare Central Hospital Ethics Committee

Board Members, Chairman Dr E Chagonda, Deputy Chairperson Ms A Mashamba, Members:- Mr J Makiya, Mrs P Sibanda, Mr. S. Hlatywayo, Dr C. Pasi (Acting Chief Executive Officer)

Appendix 9a: Letter of request for gatekeeper permission from the Chitungwiza Hospital Clinical Director

16422 Sunningdale 2
Harare
Zimbabwe
[Date]

The Chief Executive Officer
Chitungwiza Central Hospital
12096 Batanai Street
Zengeza 4
Chitungwiza

Request for Permission to Conduct Research

Dear Sir/Madam

My name is Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves *“Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe”*.

I am hereby seeking your consent to collect data for the study from radiographers who work at Central Hospitals in the Harare rural district. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. To achieve this a survey consisting of 100 randomly sampled radiographers will be asked to complete a questionnaire. In addition, a minimum of three (one from each central hospital) purposively sampled radiography managers will be asked to participate in face to face interviews

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact my supervisor, Dr Nkosi on paulinen1@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

.....
Bornface Chinene
Cell number: 0773270576
Email: bchinene@hit.ac.zw

Appendix 9b: Approval letter from the Chitungwiza Hospital Clinical Director

16422 Sunningdale 2
Harare
Zimbabwe

25 September 2020

The Clinical Director
Chitungwiza Central Hospital
12096 Batanai Street
Zengeza 4
Chitungwiza

Request for Permission to Conduct Research

Dear Sir/Madam

My name is Bornface Chinene, a Doctor of Radiography student at the Durban University of Technology. The research I wish to conduct for my Doctoral thesis involves *"A framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe"*.

I am hereby seeking your consent to collect data for the study from radiographers who work at Chitungwiza Central Hospital. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted. To achieve this a survey consisting of 100 randomly sampled radiographers will be asked to complete a questionnaire. In addition, a minimum of three (one from each central hospital) purposively sampled radiography managers will be asked to participate in face to face interviews.

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

If you require any further information, please do not hesitate to contact my supervisor, Dr Nkosi on paulinen1@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

.....
Bornface Chinene
Durban University of Technology
Cell number: 0773270576
Email: bchinene@hit.ac.zw



Appendix 10: Letter of information for survey participants



Thank you for agreeing to participate in the study. The information about the study is as follows:

Title of the Research Study: Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe.

Principal Investigator/s/researcher: Mr Bornface Chinene (Doctor of Radiography Candidate).

Co-Investigator/s/supervisor: Dr P.B Nkosi. PhD (Supervisor); Prof M.N Sibiya. D. Tech: Nursing (Co-supervisor).

Brief Introduction and Purpose of Study: Disruptive behaviours are defined as any form of unprofessional interaction between health care team members, health care workers, and or patients and families that negatively affects patient care. Studies done have indicated that disruptive behaviours if not addressed will result in medication errors and wrong-site surgery, and have been linked to the occurrence of avoidable adverse events, compromised patient safety, reduced quality, and even patient mortality. These behaviours have been shown to diminish a person's ability to think clearly and make sound judgments, hence, when they involve radiographers, they could negatively affect radiation safety of patients. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted.

Outline of the Procedures: If you agree to participate in this study, at a mutually convenient venue, date and time, 10 minutes will be allowed for you to read the letter of information and ask questions if any. If you are satisfied you will be obliged to sign the consent page. After which you are requested to complete a questionnaire. This may take 45-60 minutes. I will personally distribute and collect the questionnaire. A box will be made available for you to deposit the completed questionnaire.

Benefits: The results of this study will help mitigate disruptive behaviours in the radiology department so that radiographers can effectively carry out their radiation protection mandate to patients, staff and the public.

Reason/s why the Participant May Be Withdrawn from the Study: You will not be advantaged or disadvantaged in any way should you choose to participate or not to in this

study. You can withdraw from the study if they feel that they no longer wish to continue with the study. If you decide to do so, kindly inform the researcher. There is no obligation to complete the study.

Remuneration: There is no remuneration for participating in this research study.

Costs of the Study: You do not need to pay anything to participate in the study.

Confidentiality: All information and data will be kept strictly confidential. All questionnaires will be coded to facilitate recording but no names will be written on the questionnaires. The list of participant's names and their corresponding research number will be kept on the computer which only the researcher has the password to access the information. The supervisor will only have access to the anonymous individual data on the researcher's computer and not the questionnaires and therefore will not be able to link the participant to this data. The research data, questionnaires and any other confidential information will be kept for five years thereafter it will be deleted by the researcher.

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

If you have any questions, concerns or problems at any time about the study or the procedures feel free to contact the researcher, Bornface Chinene at +263773270576 or via email at bchinene@gmail.com or my supervisors at paulinenl@dut.ac.za. If you have any questions or concerns about ethical issues or your rights, or feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this study, please feel free to contact the Institutional Research Ethics administrator on +27 31-373 2900. Complaints can be reported to the Institutional Research Ethics Administrator on +27 31-373 2375. Complaints can be reported to the DVC: Research, Innovation and Engagement Prof S Moyo on +27 31-373 2577 or moyos@dut.ac.za

Appendix II: Consent



Statement of Agreement to Participate in the Research Study:

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

_____	_____	_____	_____
Full Name of Participant Thumbprint	Date	Time	Signature / Right

I, Mr Bornface Chinene herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

_____	_____	_____
Full Name of Researcher	Date	Signature

_____	_____	_____
Full Name of Witness (If applicable)	Date	Signature

_____	_____	_____
Full Name of Legal Guardian (If applicable)	Date	Signature

Appendix 12: Questionnaire

No: _____

Date: _____

*“Thank you for agreeing to help us with our survey “Disruptive behaviours in radiography”. There are **NO** right or wrong answers to the questions; we would just like to learn about your personal experience and thoughts. Your answers will be kept confidential”*

Section A: Demographics.

This section refers to background or biographical information. Please indicate the relevant answer by placing a cross (X) in the box provided below.

1. Gender.

Male	
Female	

2. Age

21-30	
31-40	
41 years and older	

3. Marital Status

Single	
Married	
Divorced/Separated	
Widowed	

4. Work experience.

1-5 years	
5 – 10 years	
11-15 years	
More than 15 years	

5. Academic qualification.

Diploma	
Bachelor's Degree	
Master's Degree	
Doctoral Degree	

6. Grade.

Basic radiographer	
Senior radiographer	
Principal radiographer	
Chief radiographer	

7. Number of co-workers

Below 10	
11-20	
Above 20	

8. Hospital you are currently employed (select the ONE in which you are currently employed).

Parirenyatwa Group of Hospitals	
Sally Mugabe Central Hospital	
Chitungwiza Central Hospital	

Section B. Evaluation of disruptive behaviours (DBs).

9. Have you been exposed to an incident of DB at your workplace?

Once	
More than once	
Not at all	

10. Have you witnessed a radiographer being exposed to a DB incident in your workplace?

Yes	
No	

11. Have you ever been exposed to?

	YES	NO
Verbal abuse e.g. yelled at, cursing, degrading comments or insults, humiliated		
Physical assault e.g. beaten, pushed, slapped, or kicked?		
Sexual harassment e.g. inappropriate sexual jokes, sexual behaviours (eyes, hands) etc.		

12. Who was the perpetrator?

Patient	
Patient family/escort	
Fellow radiographer	
Senior radiographer/Management	
Radiologist	
Doctor	
Any other (specify).....	

13. In your opinion what do you think triggered the DB?

Long waiting times for patients	
Intoxication of any of the parties	
Frustration due to poor working conditions	
Burnout.	
Pride	
Any other (specify).....	

Section C: Mechanism of coping with DBs.

14. Did you report the DB incidence to any of the authorities?

Yes	
No	

15. If **NO** to 14 why did you not report?

Was not important,	
Part of the job	

I felt ashamed	
I was afraid of negative consequences	
No action would be taken if reported	
Did not know whom to report to	
Any other specify	

16. If answer to 14 is **YES**, to whom did you report?.....

17. Was there any action that was taken by the authorities?

Yes	
No	

18. If yes to 17, specify action.....

19. How did you cope after the DB incident? (Specify).....

Section D: Consequences of DBs in the radiology department

20. For each of the questions below, circle the response that best characterizes how you feel about the statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree.
Incidents of DBs can affect optimum execution of my duties as a radiographer?	1	2	3	4	5
Incidents of DBs can affect the way I implement radiation protection protocols and procedures	1	2	3	4	5
DBs can cause radiographers to consider leaving the department	1	2	3	4	5
DBs can negatively affect collaboration in the radiology department “	1	2	3	4	5
DBs can affect patient satisfaction	1	2	3	4	5

Thank you for participating in this survey.

Appendix 13: Letter of information for Radiography Managers



Thank you for agreeing to participate in the study. The information about the study is as follows:

Title of the Research Study: Framework to mitigate disruptive behaviours involving radiographers at central hospitals in Harare Metropolitan Province, Zimbabwe.

Principal Investigator/s/researcher: Mr Bornface Chinene (Doctor of Radiography Candidate).

Co-Investigator/s/supervisor: Dr P.B Nkosi. PhD (Supervisor); Prof M.N Sibiya. D. Tech: Nursing (Co-supervisor).

Brief Introduction and Purpose of Study: Disruptive behaviours (DBs) are defined as any form of unprofessional interaction between health care team members, health care workers, and or patients and families that negatively affects patient care. Studies done have indicated that DBs if not addressed will result in medication errors and wrong-site surgery, and have been linked to the occurrence of avoidable adverse events, compromised patient safety, reduced quality, and even patient mortality. These behaviours have been shown to diminish a person's ability to think clearly and make sound judgments, hence, when they involve radiographers, they could negatively affect radiation safety of patients. The aim of the study is to explore DBs involving radiographers and their consequences at central hospitals in HMP in order to develop a framework to mitigate these behaviours so that healthy radiography work environments are promoted.

Outline of the Procedures: If you agree to participate, you will initially be interviewed for approximately one hour, face to face, at a mutually convenient venue, date and time. During the interview you will have the opportunity to share your experiences of DBs involving radiographers in your workplace. Your opinion will also be sought on leadership approaches that promote healthy work environments which empower radiographers to focus on delivering high-quality, cost-effective, and safe patient care. The interview will be recorded and then transcribed word for word. The interview will be facilitated by the researcher and it will last for about 45-60 minutes. For record purposes, I kindly request to audio-tape the discussion. Should it be necessary to seek clarification of any points raised in the interview the interviewer will contact you by telephone. At your request a copy of the transcript can be sent to you for verification and editing.

Benefits: The results of this study will help mitigate disruptive behaviours in the radiology department so that radiographers can effectively carry out their radiation protection mandate to patients, staff and the public. The researcher will benefit by obtaining a doctor of philosophy qualification and publishing in peer reviewed journals. The results will also be presented in conferences within Zimbabwe, South Africa and abroad.

Reason/s why the Participant May Be Withdrawn from the Study: You will not be advantaged or disadvantaged in any way should you choose to participate or not to in this study. You can withdraw from the study if they feel that they no longer wish to continue with the study. If you decide to do so, kindly inform the researcher. There is no obligation to complete the study.

Remuneration: There is no remuneration for participating in this research study.

Costs of the Study: You do not need to pay anything to participate in the study.

Confidentiality: All information and data will be kept strictly confidential. All interview transcripts will be coded to facilitate recording but no names will be written on them. The list of participant's names and their corresponding research number will be kept on the computer which only the researcher has the password to access the information. The supervisor will only have access to the anonymous individual data on the researcher's computer and not the interview transcripts and therefore will not be able to link the participant to this data. The research data and any other confidential information will be kept for five years thereafter it will be deleted by the researcher.

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

If you have any questions, concerns or problems at any time about the study or the procedures feel free to contact the researcher, Bornface Chinene at +263773270576 or via email at bchinene@gmail.com or my supervisors at paulinenl@dut.ac.za. If you have any questions or concerns about ethical issues or your rights, or feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this study, please feel free to contact the Institutional Research Ethics administrator on +27 31-373 2900. Complaints can be reported to the Institutional Research Ethics Administrator on +27 31-373 2375. Complaints can be reported to the DVC: Research, Innovation and Engagement Prof S Moyo on +27 31-373 2577 or moyos@dut.ac.za

Appendix 14: Consent



Statement of Agreement to Participate in the Research Study:

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

_____	_____	_____	_____
Full Name of Participant Thumbprint	Date	Time	Signature / Right

I, Mr Bornface Chinene herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

_____	_____	_____
Full Name of Researcher	Date	Signature

_____	_____	_____
Full Name of Witness (If applicable)	Date	Signature

_____	_____	_____
Full Name of Legal Guardian (If applicable)	Date	Signature

Appendix 15: Interview guide for Radiography managers.

Section A: Demographics

1. **Age**

21-30	31-40	>40

2. **Gender**_____

3. **Hospital**_____

4. **Years as a manager**_____

5. **Position**

Principal Radiographer	Ass. Chief Radiographer	Chief Radiographer

6. **Number of subordinates**

10 and below	11-20	21 and above

Section B: Experiences of radiography managers with regards to DBs

7. What is your experience with DB complaints involving radiographers in your department?
8. Does your organisation have robust procedures and protocols for addressing DBs? If so, please tell me about these procedures.
9. Does the leadership approach employed by a manager have a bearing on creating a healthy work environment free from DBs? Please explain.
10. Does the role model of a leader have an influence on how radiographers execute their radiation safety duties in the department? Please explain

Section C: Personal, leadership and organizational strategies for mitigating DBs

11. In your opinion what strategies that can be adopted to address/mitigate DBs at the:
- i. Individual radiographer level
 - ii. Radiography departmental level
 - iii. Organizational level

Appendix 16: A sample of the transcript of Radiography Managers.

INTERVIEW 11.

Section A.

Abbreviations

IN – Interviewer

IW – Interviewee.

DB – Disruptive behaviour

Demographics – 33 year old male principal radiographer.

Experience: Four year managerial experience.

Academic qualification: Master's degree.

Section B.

IN. What is your experience with DB complaints involving radiographers in your department?

IW. I like the use of the term disruptive behaviour because it actually outlines or makes it clear about what we are about to discuss. Disruptive in the fact that you are no longer doing things the normal way. So if I come to work and you don't talk to me somehow it will disrupt the way I work. If you shout at me, tease me, if you talk about me behind my back maybe with other people it will always disrupt the way I conduct myself.

There are quite a number of them, the first one that can come to mind was the disrespectful behaviour that was being shown on social media. Were you will notice that the recently qualified radiographers not paying due respect to their seniors, like their lecturers.

We have some that have been in the system for a very long time. We don't want to call them Gods but they have made significant contributions to our profession and we have to respect them for that. But you find one or two people disrespecting those particular people. To us when I am now the senior person, it may affect me. That incivility will make things difficult for me as a leader, or as a senior person to engage with these young ones probably on a mentorship basis. It will affect the way we relate in the long run, it will affect even the way I look at the place where they were trained. Like maybe they were trained atI now have a negative perception towardsradiographers because of this particular individual. Maybe it is someone with a diploma or Master's degree I now have a negative perception towards them.

But ideally, when we look at these cases we need to look at them from an individual basis, don't blanket everyone because they are a Shona speaking person or maybe they are from Matabeleland or they are from this institution. Things happen and we will meet different characters. We have met a lot of these on social media.

We have also seen industrial action where radiographers just down tools and decide not to work. Uuuuh and you sometimes when you down tools and somebody tries to address you, you are likely to say things that you will regret especially if it comes to matters that have to do with remuneration, benefits and what not. If you are not getting enough money from the employer for example or if they are too many of you that are failing to report at work. And it's just you at work, and somebody tells you that you are slow....the backlash will not be a good one. You will ask them that can't you see the effort that I am putting? Usually when that happens cases like these always crop up. So we have had these cases.

IN. What of between radiographer and patient have you ever experienced anything?

IW. Yaaaah for me, for example I have experienced those especially when we have to break protocol....the patient will think that I am breaking protocol but I will be following procedure. For example a patient walks in being brought in by an ambulance technician and we notice that this patient is an emergency case, I allow them to jump the queue. An elderly patient, a senior citizen comes, you may allow them to jump the queue. We have certain grades that allow us to break protocol, maybe it's a minister you know. The minister of finance comes to our department, you can't keep him waiting. So when you break protocol in such cases you will notice that patients will not be happy about it...they will not be pleased about it. So they will always come back to you and say you are not being fair. This kind of service is poor, you could have done better, and you should have communicated. But sometimes you communicate but you cannot please everyone all the time. So there are words that they say sometimes. Sometimes it's not like they say the words but when you ask them certain questions, they are rude when they respond.

Can't you see what is written on the paper! Like the request form, why do you keep on asking me?

But from the back of your mind you know that this patient is responding this way because of the previous incidence. So you meet those ones and sometimes an issue where they are in pain, you try to move them or ask them to do something that they can't do, then they shout back at you...saying can't you see that what you are trying to do is impossible. But it doesn't happen that frequently you meet these unexpectedly.

IN. Ok how about maybe between radiographers and other healthcare workers?

IW. We have a lot of those ones because in terms of culture we have always had a paternalistic model taking over how our institutions are run. The doctor wants to control the radiographer, the radiographer feels they are above the nurse, and the nurse in charge or matron wants to control the radiographer. So we will always have this inter professional conflict merely because people do not understand the culture of another profession. We have grown up as radiographers and we feel like we are at the same level with other professions and yet they feel they are above us. So you will notice that doctors, radiologists and some of these specialists when they see a radiographer they feel like they are way below the ladder and they can do anything they feel like doing.

You go to theatre they are shouting at the radiographer. You go to any other ward maybe and there is order for an x-ray to be done. And for some reason the x-ray is not done then the doctor comes and lashes out to any radiographer that he sees in site. Without even looking at the circumstantial background to say why wasn't it done? Were there any problems, and was it communicated that this patient needed an x-ray? They don't even look at that, all they do is shout. It's because they have that authoritative mentality that they have carried from way back. It is their culture that they abuse those that are below the ladder and its very rare for the radiographer to do that because they are the novice. They are the ones that are rising on the ladder.

IN. In your opinion how then can we address these DBs?

IW. We have talked about culture, the doctors have their own culture, the nurses have their own culture, the lab scientists have their own culture and every other profession has its own culture. If you don't understand the other professions culture you are bound to have problems. I am looking at someone who washes their hands before they eat.....who use their hands to eat and someone who uses a fork and knife. So when the two meet, the one who uses a fork and knife may actually be derogatory to the one who uses their hands you see. But it's just a culture we use our hands.

So that's the same thing we need to understand each other and how we work. Because we are the ones that are suffering as radiographers we need to have a program allows education to be imparted to other professionals so that they understand our culture. So that they understand how we do things. If they have that understanding I am sure many of these challenges that we end facing will be eliminated. So we need to have a structured program, maybe CPDs or whatever, even inter cultural exchanges – inter professional cultural exchanges not the ethnical ones.

Between patients and radiographer, most of these come because ofthe ones that I can think of, workload. If the radiographer is overwhelmed we are going to have challenges in the way they relate with patients. If there is uumm too much throughput you are going to notice that turnaround times will increase and those will frustrate patients and they will always find something to throw their frustrations to and usually it's the radiographer.

We also have issues to do with communication. I remember this other day, when a Ndebele speaking patient came to a radiography department in Bulawayo. They were expecting the radiographer to speak in Ndebele, then the radiographer unfortunately spoke in Shona and there was a big fight until the radiographer said no I am not obliged to speak Ndebele I will use English because English is the universal language. And the patient was saying no this is Matabeleland so you should speak in Ndebele and it didn't end well.

IN. How was that particular issue addressed?

IW. Well, this one is speaking in English and the other is speaking in Shona, obviously they had to find someone who speaks Ndebele to attend to the patient. And you know the service that was going to be accorded to this patient of course will have been compromised because there was already bad blood between these two. So another Ndebele speaking radiographer was asked to come and attend to this patient.

Were a patients just comes or walks in and feel they are superior they are supposed to be given preferential treatment because of their language or job or status. Then they feel like you are taking longer. So how do you address these challenges; number one, you need to make sure that workload is reduced, individual workload. I remember this study that was done by Mr XXXX and others. What they were saying is that we have these things, for example in ultrasound a single ultrasound scan. Maybe an antenatal ultrasound scan should be 45 minutes. So if you divide with working hours you find that I must do five or six scans per day. But you will find me doing 15! There is a problem and it will then cascade down to DBs because I am being overwhelmed. So we need to make sure when we are staffing out departments we have enough people that are commensurate with the ratio of patients that are being attended to. We don't want a situation where a single radiographer attends to 1000 patients. If we need t10 lets employ 10. But I know sometimes the employers want to make profit so they cut corners and bleed the asset who the radiographer. When they are bled service is compromised, they burned out, they become stressed. At the end of the day their relationship with patients, other workers suffers. The inter professional relationships are affected. So we need to deal with the workload and number of employees.

Number two, we need to train these radiographers, periodic trainings oh how to deal with people. I am looking at myself, I am under pressure whereas I told people that I can work under pressure. But when pressure really presents itself sometimes you fail to handle it. But if you are knowledgeable you will know how to deal with patients.

Communication for example is a good thing. You have a whole bench full of patients; just spare a moment to talk to themcommunicate with them. Let them know that you are overwhelmed. They should know that you are overwhelmed. Let them know that I am the only one attending to you and for a single procedure I am likely to take five minutes. So if they are 50 of them they will know it will take an hour or so before they are attended to. So they understand tell them if they is a need for someone to skip the queue. Communicate with constantly. So I think communication is one of those areas that need to be worked on a periodic basis. For example we should have refresher courses on communication because it solves a lot of these problems. Even when colleagues fight.....if you cannot talk about it, it will be like poison, it will be toxic to even the work environment. Talking about it resolving conflict is something that can actually help the situation.

So we talked about the workload, we talked about refresher courses in communication or even emotional intelligence. Then we can go to motivating your workers remember we once talked about the industrial action. These people do not have enough tools of trade. They don't have enough PPE and maybe they are not earning enough. These people are disgruntled and obviously when they deal with other people you won't expect healthy relationships. For that to happen even under constrained conditions you must have a motivated workforce. So the leaders must be trained of how to motivate their subordinates. Even oh how to communicate effectively. Sometimes there is no food in the house but you won't see anyone quarreling with each other because they understand why there is no food. Because sometimes the mother will think that there is no food because the children are wasting the food and the children might think that the mum being given a lot of money by the dad but she is putting it in her pocket. It's because these two parties do not understand what is really going on. But if you understand what is really happening. If the organisation has a culture of

disseminating information from all the levels; middle management, top level and low level. If there is that constant communication, motivation you will notice that you won't have some of these issues.

We also have another one, where those that are senior especially male figures sought out abuse female figures. You find that they come to their office and be passing on comments you know that are sexually oriented. Maybe you have a nice dress and those kind of things and then the lady smiles and they go on you know and talk about other issues until the lady feels uncomfortable. In a way, I think it's disruptiveBecause the next time they want to come here it's now difficult for them. So we have that kind of sexual harassment which is not direct because there is no physical contact. But there are things that happen that make it difficult for the other gender to work. So with those ones, well I have experienced one or two. What we have done with those ones is you report, you allow the weaker gender to report. When they report you approach the individual concerned. You tell them what has been happening and what transpired and that you don't expect it to continue. Most of the times it stops. But where it continues now you will need other measures. Because if that person is the boss, which means you need external remedies, you need to approach maybe a labour lawyer or someone else who is external so that they understand that the problem has now gone out of hand. The issue would have gone outside the organisation and it's now public and it might end up going to the court of law. I know most of these ladies have no capacity to take their bosses to court.

IN. Let me interrupt you, what of if she can't report because she is scared that her work relationship will deteriorate?

IW. The challenge with that one is usually in private practice where maybe that's where your source of income is coming from and there is only one boss. If there are too many bosses you can always avoid the one concerned. In private practice it becomes difficult and we have seen cases like that, where people just end up resigning or not coming to work and nothing is done to the radiologist since it's their practice. Because of that financial muscle they can even win their way even if you take them to court.

But the only way it can be dealt with is by seeking these pro women organisations. You don't make it public that it was you who reported. But you do so anonymously. Then these people will just come and tell the person that, no we have reports like this....maybe from an employee that has since resigned. So that it does not appear like it's the employee still there. At least if he is made aware that complaints are coming in, there will be that restraint on the individual.

These pro women bodies can go to workplaces and introduce themselves and let the employer know that we are monitoring and then put a number at their workplace for reporting cases. If the employer is aware and if anything happens they know it did not happen because of an incident that happened but because of a system that is already there which is in place which people can make use of.

You see maybe a gender violence organisation comes here they put their number on the wall. So it's not like they have come to do this because there has been an incident...no, they are just protecting those in case you come across such incidents you can always report. So if we can do it that way I think it can assist especially those that are vulnerable.

IN. What mechanisms does your organization have in place to deal with DBs?

IW. Well they might have channels where you can report cases and what not but I think it boils down to the individual...the individual should take charge of their health because this is a wellness issue. Their wellbeing is affected obviously, their work environment will be affected and everything else will be affected including patient care. So the individual themselves must take it up upon themselves to seek ways you know to address such challenges. They should be involved for example by attending these CPDs that have something to do with such issues. Let them develop themselves personally, find knowledge and ways to deal with these issues.

Sometimes the systems are there to report but you don't know as an individual and the boss won't tell you that there is one or two ways in which you can deal with this. Because they know that if you know you will report them. So you need to make that effort to find out the policies of the organisation. Once you find out you will notice that this can be dealt with in this way and this can be dealt with in this way.

But for the supervisor to actually initiate that when they know that it's going to be an issue against them in the long run, they won't do that, so it comes down to the individual. Look for the information yourself, we have a lot of institutions even legal help. You can get legal help for free but people don't know so once you know, it's easy to deal with some of these issues.

IN. in your opinion what do you think is your role in mitigating these behaviours?

IW. The first role of course is policy, you must have a policy to guard against these DBs. So you should influence the government, you should influence the employers and all these other leaders that we should have a policy that governs the conduct of workers. Remember the last time we pushed for a code of conduct where issues like social media bullying was addressed. So those are the things we can do as leaders to push agenda setting, lobby the government and lobby civic societies to address such challenges.

The last one we did was mental health where we asked some experts in that field to come and give a presentation. The good thing was that a lot of radiographers assisted in that process. That's one way of dealing with these issues.

Number two, they are times when you have to resolve conflict, take people who are not working together well. Sit down with them and talk to them and make them understand why they are there and how a toxic work environment can affect overall performance of the organisation. And when you resolve that conflict you realize that it won't happen again.

Remember we talked about that anonymity, when you are a leader and you are given an anonymous tip, don't go about telling everyone that it was so and so. So when they realize that they can confide in you and you can keep it to yourself that trust is what is gained. Moreover when you speak to people they will listen to you because they know that you are not doing it for any personal gain but it's for the betterment of everyone else .

IN. Please go on

IW. I talked about policy and I also talked about motivation, conflict resolution, we talked about teaching other professions because in hospitals we have multi-disciplinary teams. Once in a while you ask for a slot to present and talk about your profession so that they understand the challenges that you facing and what not. It can also help. And the scheduling of work, you need to know how to schedule. If it means you have flexi hours as long as it's going to get the job get done you can minimize stress to the radiographer. It will help.

Listen to them also, we were talking about communication. Learn to listen, listen to their challenges and things that are affecting them, and deal with those challenges before anything actually happens.

IN. In your opinion, do you think that the role model of a leader has an influence on how radiographers execute their radiation safety duties in the department?

IW. Yeah it does have a bearing, you see if the leader is a bad leader everyone else will follow suit. When I was traineduuuum its like I thought that radiographers were Christians. That was the culture I was seeing in them, no one would say bad things. It was always a nice environment. And you would never think that these guys actually drink beer. Because they knew how to handle themselves. So I don't know were all this changed. Maybe because we now have a lot of radiographers and we don't have that overall overseeing member or profession were we would say if so and so hears about it he will reprimand you. Now people just do what they want.

So the culture imparted way back and when these students are initiated into the profession. When they realize that radiographers do things this way they will not deviate. So we have tried it to impart such behavioural standards to these young students especially the ones in the association. To make them understand where we are coming from and where we are going and how we expect them to conduct themselves.

Obviously when they look at me they are going to pick one or two traits. I am not saying I am perfect but maybe I have these bad tendencies. If they see them in me obvious they will pick them and continue with them.

We were talking about the paternalistic model. When a doctor is trained and they see their superior abusing another professional, they will do the same. So as a leader I have to try address myself or conduct myself in a way that is exemplary to others. Otherwise if I don't do it people will follow the wrong tracks.

IN. What do you think the organisation should do to better equip you to deal with DBs in your department?

IW. A leader must have power. Power comes in different forms. Knowledge is power, so I think they should invest in making me knowledgeable. I have to go to school and acquire these leadership qualities. So if you have that knowledge it's easier to deal with any challenges that may come. Sometimes we are taught to do clinical work perfectly but the way we handle people can suffer. We shouldn't think that it's all about producing a beautiful radiograph and then we forget about the other component about how to handle subordinates. They teach you how to communicate but they won't tell

you that you are going to meet disruptive behaviours and how to deal with them. So we need that number one. Number two authority comes with respect. You can't make me a leader without giving me a position. They will just say this is the senior radiographer just because of the experience that I have, but they are not giving me a position to say head of department which comes with benefits. When we talk if these benefits we also talk about the power that position has. For example, the power to suspend, the power to employ. If someone understands that when you talk to them they will understand that you can fire them, sometimes they listen to you. But when they realize that no.....you are just a ceremonial leader sometimes they don't even listen to you. I would ask for such kind of authority were I can punish and reward. And the use the rewarding power to motivate and the punitive one I may not even need to use it. But if they know its there, but of course I may not need to abuse it.

People may also fail to report they know people will get fired.

You will notice that if a radiographer is called into the chief radiographer's office. I am not saying they should be scared buy the way they go to that office will be different than when they are called to the CEOs office. When they are called to the CEOs office, they probably come in a suit. They respect the office but not the chief radiographer which is wrong. We are not saying we should worship the chief radiographer but we are saying the chief radiographer should be respected and should be part of the decision making body on who should be fired and who is employed. Of course the HSB is responsible for hiring and firing but let the chief radiographer be on the panel of those that are going to choose who comes in, so when the radiographer comes and sees the chief radiographer in the panel they will know that the chief radiographer was responsible for their employment. And when they are fired they see you again, eventually it will be known that the chief radiographer has some form of power.

I thank you very much for taking your time to talk to me.

Appendix 17: Letter of confirmation of consultation from the statistician.

Gill Hendry B.Sc. (Hons), M.Sc. (Wits), PhD (UKZN)
Mathematical and Statistical Services

Cell: 083 300 9896
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25 August 2021

Re: Assistance with statistical aspects of the study

Please be advised that I have assisted Bornface Chinene (Student number 22064646), who is currently studying for a Doctor of Radiography at DUT, with the statistical aspects of his study: the questionnaire development, sampling and data analysis.

Yours sincerely

Dr. Gill Hendry
Private Consulting Statistician

Appendix 18: Letter from the professional editor

EDITING LETTER

696 Clare Road

Clare Estate

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4091

30 September 2021

To: Whom it may concern

Editing of PhD: Bornface Chinene (22064646)

**FRAMEWORK TO MITIGATE DISRUPTIVE BEHAVIOURS INVOLVING
RADIOGRAPHERS AT CENTRAL HOSPITALS IN HARARE
METROPOLITAN PROVINCE, ZIMBABWE**

This letter serves as confirmation that the aforementioned thesis has been language edited.

Any queries may be directed to the author of this letter.

Regards

MP MATHEWS

Lecturer and Language Editor

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Appendix 19: Turnitin report

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