# A MODEL TO FACILITATE SUPPORTIVE CARE FOR MEN'S SEXUAL HEALTH IN PATIENTS RECEIVING RADIOTHERAPY FOR PROSTATE CANCER

by

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Thesis

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Signature

11 November 2025
Date

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# DISSEMINATION OF RESEARCH OUTPUTS

The research conducted for this doctoral thesis resulted in several scholarly contributions, namely conference and workshop presentations, two manuscripts and one research publication. This publication originates from the Master's research project and builds upon the literature review conducted for the doctoral research project (see Section 3.8). These contributions are detailed as follows:

Phahlamohlaka, N. M., & Mdletshe, S. (2022). Multilevel interventions to address sexual health challenges in men with prostate cancer. *South African Journal of Oncology. 6*(0), Article a243. https://doi.org/10.4102/sajo.v6i0.243

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Phahlamohlaka, N. M. (2024). Transforming qualitative data into quantitative data using mixed methods research. [Oral presentation]. *Society of Radiographers of South Africa (SORSA) seminar,* 20−23 May 2024, Central University of Technology, Free State.

Phahlamohlaka, N. M., Engel-Hills, P., & Friedrich-Nel, H. (2025). A model to support radiation therapists in facilitating sexual health counselling for patients with prostate cancer. *Health SA Gesondheid*, 30(0), 10. https://doi.org/10.4102/hsag.v30i0.3047

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Phahlamohlaka, N. M., Engel-Hills, P., & Friedrich-Nel, H. (2025). Involvement of radiation therapists in discussing sexual health challenges with patients. [Oral presentation]. *Society of Radiographers of South Africa (SORSA) Congress*, 05 - 07 September 2025, Cape Town, South Africa

Phahlamohlaka, N. M., Engel-Hills, P., & Friedrich-Nel, H. (2025). A model for radiation therapists to provide sexual health support for patients with prostate cancer. [Oral presentation]. *Congress of Oncology conferences (SACO)*, 12 - 13 September 2025, Sandton, South Africa

# ABSTRACT

Men receiving radiotherapy for prostate cancer often experience erectile dysfunction, which adversely affects their intimate relationships. Yet, few oncology settings provide supportive care for sexual health as a routine practice for patients treated for prostate cancer. Oncology health professionals often avoid discussing sexual health issues or overlook the sexual concerns of men during radiotherapy for prostate cancer as routine practice during patient counselling. This study claims that radiation therapists (RTTs) are frontline oncology health professionals and are well placed to deliver supportive care for men's sexual health (SCMSH) in an oncology setting. The aim of this exploratory sequential mixed methods study was to develop a model to promote SCMSH in patients receiving radiotherapy for prostate cancer.

Research sites were oncology departments at two academic hospitals (Hospitals A and B) in Gauteng province, South Africa. The research study was conducted in four phases. The primary objective of Phase 1 was to explore the experiences of patients of sexual health support they had received during radiotherapy for prostate cancer. The timeframe for the data collection for Phase 1 was from 1 January 2021 to 30 April 2021, which period included a pilot study. Phase 1 data collection was conducted at a single hospital (Hospital A) and involved men who had completed radiotherapy for prostate cancer in the past six months or more and were recruited with purposive sampling. The target sample for Phase 1 comprised 15 participants; however, data saturation was achieved after 12 face-to-face interviews. ATLAS.ti 23 software was utilised to organise and generate codes for the analysis of interview transcripts. Patient interview data were analysed using a six-step reflexive thematic analysis approach. Four themes and seven subthemes were identified and developed.

The objective of Phase 2 was to explore the perspectives of RTTs on their role in facilitating SCMSH as part of routine care for patients treated for prostate cancer with radiotherapy. The Phase 2 quantitative survey was conducted at both selected hospitals from 1 September to 30 November 2021; a pilot study was done in the same period. A target population of 60 scarce-skilled RTTs was selected through purposive and convenience sampling. The sample size was calculated to be 50; ultimately, 48 respondents completed and returned the questionnaire. Descriptive analysis and cross-tabulations were performed using SPSS Version 29 to identify trends and compare key variables. Fisher’s exact test was used to determine the statistical significance of the relationships between variables of interest in this study. The findings of the Phase 2 survey indicate that 64.6% of RTTs attempted to address the sexual health concerns of men during radiotherapy for prostate cancer.

Combined findings suggest that oncology health professionals seldom provide SCMSH during radiotherapy for prostate cancer. Moreover, it was found that RTTs lack the confidence and are not adequately prepared to address the sexual health challenges faced by men undergoing radiotherapy for prostate cancer. Statistical analysis revealed no significant association between the gender of respondents and avoidance of talking about sexual health issues ($p$=0.181). Similarly, no statistically significant association was found between the influence of culture on the approach to the sexual health topic and race ($p = 0.201$).

Phase 3 involved the development of a model to facilitate SCMSH for men treated for prostate cancer in oncology settings in the South African context. To develop the proposed model, Dickoff’s theory was applied to classify the central concepts extracted from the integrated findings of Phases 1 and 2. The identified concepts were written into relationship statements to guide the development of a model framework. The development of this model followed Chinn and Kramer’s (2011) empirical knowledge development approach. In Phase 4, eight experts with relevant professional backgrounds and expertise in model development were invited to participate in a panel to evaluate the model’s clarity, simplicity, consistency and reliability. Additionally, operational guidelines were developed to support the implementation of the model in broader oncology settings.

In conclusion, a model framework was developed, described, and evaluated. This model could potentially enable and support the involvement of RTTs in facilitating sexual health counselling for men receiving radiotherapy for prostate cancer. It is anticipated that the developed model could enhance whole-person care by promoting integration of sexual health counselling into routine patient care practices, leveraging the role of RTTs.

**KEYWORDS**: Erectile dysfunction, male sexual health, mixed methods research, oncology health professionals, radiation therapists, prostate cancer.

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| BCW | Behaviour Change Wheel |
| BETTER | Bringing up (B), Explaining (E), Telling (T), Timing (T), Education (E), Recording (R) |
| COM-B | Capability, opportunity, motivation and behaviour |
| EASSi | Engagement (E), Assessment (A), Information and Support (S), Sign-posting (Si) |
| Five A's | Ask, assess, advise, agree, and assist |
| HEQSF | Higher Education Qualification Sub-Framework |
| IPA | Interpretive phenomenological analysis |
| NQF | National Qualifications Framework |
| PCC | Person-centred care |
| PDE5 | Phosphodiesterase Type 5 inhibitors |
| QUAL | Qualitative |
| quan | Quantitative |
| RTTs | Radiation therapists |
| SCMSH | Supportive care for men's sexual health |
| TDF | Theoretical domains framework |

## GLOSSARY OF OPERATIONAL TERMS

### Facilitation

In this study, the concept of facilitation refers to collaborative efforts of oncology health professionals working alongside other healthcare professionals to deliver SCMSH in patients undergoing radiotherapy for prostate cancer to enable whole-person care in oncology settings.

### Men’s sexual health

Men’s sexual health is a unique discipline that involves issues relating to the urologic, sexual and reproductive health of men (Houman et al., 2020). For this study, men’s sexual health is defined as the general well-being of men regarding sexual function, performance and satisfaction, which encompasses a range of factors, such as libido, erectile function, ejaculation and reproductive health (Harvard Medical School, 2024; Krause, 2007; Yale Medicine, 2024).

### Model

A model is a symbolic or diagrammatic illustration of a concept or theoretical relationship that utilises pictures, symbols, mathematical notations, and diagrams (Chinn et al., 2022; Chinn & Kramer, 2011). It is also defined as a depiction of the relationships between concepts, providing a meaningful interpretation of phenomena and illustrating how concepts relate to each other (Brink et al., 2013).

### Oncology nurse

An oncology nurse is a healthcare professional who functions independently and interdependently with the radiation oncology team to provide high-quality patient care. An oncology nurse provides clinical care, consultation, and education. Radiation oncology nurses may participate in leadership roles, including those of clinicians, educators, consultants, and researchers (Cummings et al., 2018; International Atomic Energy Agency, 2014).

### Oncology health professional

In the context of this study, an oncology health professional is any healthcare provider who has direct contact with patients with cancer in oncology settings, involved in their diagnosis, treatment, and/or care. Oncology health professionals may include, for example, radiation oncologists, medical oncologists, radiation therapists, and oncology nurses.

### Person-centred care

Person-centred care involves treating patients as individuals and equal partners by focusing not only on their medical condition or symptoms but also taking into account their individual preferences, abilities and social and cultural backgrounds (Coulter & Oldham, 2016; Health Foundation, 2014).

### Sexual care needs

The phrase sexual care needs, in the context of this study, refers to specific and personalised needs related to sexual health and well-being that patients may have, which encompass information and communication needs and physical, mental and emotional support needs (Lehmann et al., 2022; World Health Organization, 2006, 2015).

### Sexual health

Sexual health is a state of physical, emotional, mental and social well-being related to sexuality; it is not merely the absence of disease, dysfunction or infirmity (World Health Organization, 2006, 2015).

### Sexual health counselling

Sexual health counselling is an arena in which norms and values about sexuality, body and health are communicated and negotiated. both the provider and the recipient of the counselling enter the conversation with their own specific set of ideas, experiences and assumptions (Helman, 2007). This study considered sexual health counselling to be a type of counselling that addresses issues related to sexual health, with the intention to identify mental health issues, physical challenges and emotional concerns that affect male patients' sexual function, libido and desire for intimacy that result from prostate cancer diagnosis and treatment, conducted by oncology health professionals.

### Supportive care

Supportive care refers to the provision of necessary support to people living with or affected by cancer, to meet their informational, emotional, spiritual, social and physical needs during their diagnosis, treatment and follow-up phases (Hui, 2014). In the context of this study, supportive care refers to the care offered to men with sexual health challenges, such as erectile dysfunction, during and after radiotherapy for prostate cancer in the oncology setting.

### Radiation oncologist

A radiation oncologist is an oncology health professional who oversees cancer treatment involving radiation. Radiation oncologists are highly trained specialists who prescribe and develop tailored radiotherapy treatment plans and manage their related side effects (International Atomic Energy Agency, 2009; Leung et al., 2023).

### Radiation oncology

Radiation oncology is a clinical medicine discipline that uses ionising radiation, either alone or in combination with other cancer therapies, to treat patients with malignancies or other diseases. This speciality can be practised as a standalone oncology speciality or integrated with other oncology specialities to improve the effectiveness of radiotherapy for comprehensive cancer treatment (International Atomic Energy Agency, 2014; Valentini et al., 2020).

### Radiation therapist

A radiation therapist is also known as a radiotherapist, radiotherapy radiographer or radiotherapy technologist. A radiation therapist is an oncology health care professional who plays a role in a multidisciplinary radiation oncology team that typically includes radiation oncologists, medical physicists, oncology nurses and support staff. Their primary responsibility is the safe and precise administration of radiotherapy to patients with cancer. This encompasses treatment preparation, planning, delivery and daily clinical care. Radiation therapists monitor side effects, provide psychosocial support and ensure accurate dose delivery as it relates to local policy. They collaborate with other oncology health professionals to effectively address the needs of patients (International Atomic Energy Agency, 2014; Mattarozzi et al., 2019).

### Radiotherapy

Radiotherapy is a type of cancer treatment that kills cancerous cells in the human body by exposing them to ionising radiation, such as X-rays, gamma rays, high-energy electrons or heavy particles. It is one of the most widely used cancer treatments, with approximately half of the patients requiring radiotherapy during their illness (International Atomic Energy Agency, 2014; National Cancer Institute, 2015).

**Whole-person care**

Whole-person care entails addressing the physical, mental, emotional, social and spiritual needs of patients as integral components of their overall care (Loma Linda University Health, 2024; Thomas et al., 2018, 2020). The supportive care model for men’s sexual health proposed in this study considered these interconnected patient needs through a holistic approach to care that transcends person-centred care.

**Wholeness**

Wholeness refers to the state of balance within a person’s internal environment, comprising the body (anatomical and physiological changes), mind (emotions and attitudes), and spirit (beliefs), which are integrated with the external environment (Department of Nursing Science, 2019). In this study, whole-person care embodies the concept of wholeness.

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# CHAPTER 1

# OVERVIEW OF THE STUDY

*What you see outside is only the tip of the iceberg.*

Unknown

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## 1.1 INTRODUCTION

From 2009 to 2015, I worked as a radiation therapist (RTT) in radiation oncology in South Africa. Through my routine interactions with patients during this time, I observed that they experience changes in their sexual function during radiotherapy for prostate cancer. Several male patients approached me with concerns about sexual function, which highlighted the need for further research and understanding of this phenomenon. This led me to conduct qualitative research towards my Master's degree (2013–2016) to explore the psychosexual experiences of men following radiotherapy for prostate cancer (Phahlamohlaka, 2017). Other studies indicate that sexual function in men deteriorates after prostate cancer diagnosis and treatment, and erectile dysfunction is the most common issue they experience (Collaço et al., 2021; Green et al., 2022; Labate et al., 2023; Phahlamohlaka et al., 2018; Sheng, 2021; Velurajah et al., 2022; Watson et al., 2021).

Oncology health professionals often find it challenging to provide sexual health counselling to patients with cancer (Bingham et al., 2024; Krouwel et al., 2019; Oskay et al., 2014; Phahlamohlaka & Mdletshe, 2022). The role of RTTs in facilitating supportive care for sexual health in patients during radiotherapy for prostate cancer remains underexplored in the South African context. Bolderston (2004) and Motshweneng and Mdletshe (2021) advocate for the role of RTTs in cancer care to be extended. The central argument or claim of this study is as follows: RTTs are well positioned to provide emotional support and discuss sensitive topics such as sexual function and intimacy with patients who are undergoing radiotherapy for cancer (Flood et al., 2023; Hulley et al., 2016; Lynch et al., 2019; Mattarozzi et al., 2019; van Beusekom et al., 2019).

This study aimed to develop a model to support the facilitation of men’s sexual health in patients receiving radiotherapy for prostate cancer in oncology settings. The overarching goal was to encourage the active involvement of RTTs in providing SCMSH in oncology settings. This chapter outlines the background to the research problem, the context and the rationale for the study. It also presents the research question and aim of the study, and presents an overview of the research methodology. Finally, this chapter highlights the impact and contributions of the current study.

## 1.2 BACKGROUND

Prostate cancer is rated the second-most-common cancer and the fifth leading cause of cancer deaths among men worldwide: an estimated 1 414 000 new cancer cases and 375 304 deaths were recorded in 2020 (Sung et al., 2021). African American men have the most significant prostate cancer burden globally; the relationship with African men is unclear (Hayes & Bornman, 2017). Because of poor screening programmes, the incidence of prostate cancer in all African countries is unknown (Le Roux et al., 2015). Globocan reports suggest that the incidence of prostate cancer is the highest in sub-Saharan Africa and accounts for 7.3% of all cancers worldwide (Adeloye et al., 2016; Deo et al., 2022; Seraphin et al., 2021). In South Africa, prostate cancer is the most common cancer in men for all ethnic groups (Seraphin et al., 2021), and the incidence of prostate cancer has increased from 29 per 100 000 men in 2007 to 68 per 100 000 men in 2018 (Cassim et al., 2020; Le Roux et al., 2015; Singh et al., 2015).

Treatments for prostate cancer include surgery, brachytherapy, radiotherapy and androgen deprivation/hormonal therapy, which affect various aspects of sexuality in patients and survivors of cancer (Gryzinski et al., 2022; Kyrdalen et al., 2013). Approximately half of patients with prostate cancer undergo radiotherapy at some stage of their disease (Campbell, et al., 2000). Common side effects of prostate cancer treatment include urinary incontinence, loss of libido, gynaecomastia and penile shrinkage. Erectile dysfunction is a common sequela in men following prostate cancer diagnosis and treatment (Carter et al., 2017; Cormie et al., 2013; Galbraith & Crighton, 2008).

Approximately half of patients with prostate cancer who undergo radiotherapy experience some degree of anxiety, distress and sexual health issues (Cleveland

Clinic, 2020; Oliveira et al., 2022; Weis, 2015). Men receiving radiotherapy for prostate cancer face unmet sexual health care needs and a mismatched in expectations between them and oncology health professionals regarding communication about sexual health concerns (Gilbert et al., 2016; Hordern & Street, 2007a; Krouwel, 2019). Sexual health care is often overlooked and is therefore not routine practice in all oncology settings (Mercadante et al., 2010; Oskay et al., 2014).

Mattarozzi et al., (2019) and O'Neill et al., 2023) emphasise that RTTs are uniquely placed as frontline cancer professionals to engage with patients regarding their experiences with cancer diagnosis and treatment. However, little research has been done on the use of RTTs in oncology settings to provide supportive care for patients with sexual health issues. Several barriers prevent oncology health professionals from having a conversation with their patients about sexual health when they try to provide supportive care for SCMSH as part of standard care for patients undergoing radiotherapy for prostate cancer (Dyer & das Nair, 2013; O'Connor et al., 2019). These barriers include personal factors such as gender, an age gap, culture and religion, as well as organisational factors such as the absence of referral services and the short time available for consultation in busy oncology clinics (Jonsdottir et al., 2016; Phahlamohlaka & Mdletshe, 2022). Table 3.3 provides more information on communication barriers related to sexual health.

Care for patients with cancer often focuses primarily on disease-centred therapy, while discussions about patients' sexual health concerns are often overlooked or the discussion avoided by healthcare professionals (Lynch et al., 2019; Mercadante et al., 2010). Current cancer care frameworks and treatment guidelines support the delivery of psychosexual care to patients with cancer (Carter et al., 2018; McCaughan et al., 2020). This type of care involves ensuring that patients have continuous access to specialised care, providing them with information that the specialist needs and giving them clear guidance regarding any possible long-term side effects of their treatment. Patients and partners frequently report that they do not receive adequate support to manage sexual health concerns (O'Connor et al., 2019).

## 1.3 CONTEXT AND RATIONALE

In South Africa, radiotherapy treatment is available at only a few academic hospitals in the public healthcare sector, which are generally long distances from each other (Rubagumya et al., 2023). Moreover, universities of technology train a relatively small number of RTTs to serve the public and private healthcare sectors (Ramashia, personal communication, 1 July 2023). In South Africa, the workforce of RTTs is generally small, young, and predominantly female (Mokoena, personal communication, 7 May 2021; Engel-Hills & Friedrich-Nel, personal communication, 7 January 2025).

In South Africa, amendments to the Health Professions Act No.56 of 1974, which defines the scope of the radiography profession, acknowledge that RTTs collaborate with radiation oncologists to ensure optimum care and psychosocial support for patients with cancer and families affected by cancer (Health Professions Council of South Africa, 2021). However, the scope of this practice does not specify whether radiation therapists should facilitate sexual health support as part of routine counselling for patients undergoing radiotherapy. Patients highly value RTTs for their good therapeutic relationships with patients and for providing emotional comfort (Halkett & Kristjanson, 2007; Mattarozzi et al., 2019). However, it appears that sexual health dialogue between RTTs and patients is inconsistent and varies between persons and departments. Radiation therapists frequently feel uneasy when patients with prostate cancer enquire about issues related to changes in their sexual function. Other healthcare professionals also feel ill-equipped to engage in dialogue about sexual health and to confidently address patients' concerns (Dyer & das Nair, 2013; Rubio-Rask et al., 2021). Nonetheless, there has been little research concerning the facilitation of supportive care involving RTTs for sexual health in patients undergoing radiotherapy for cancer.

## 1.4 STATEMENT OF THE RESEARCH PROBLEM

Caring for patients with cancer in radiation oncology extends beyond disease management, radiation doses and treatment planning; it also encompasses addressing their psychosocial well-being during cancer treatment to ensure whole-person care (see Section 2.1). The literature review indicates that RTTs play a limited role in providing supportive care for the sexual health of patients undergoing radiotherapy in oncology settings. Turner (2019) contends that factors such as the scope of practice limitations and job descriptions of oncology health professionals who work in oncology somehow limit RTTs from including sexual health in routine cancer care for patients. In radiation oncology, the task of sexual counselling is often assigned to radiation oncologists. However, because of factors such as busy oncology clinics, little time for consultation, staff shortages and personal constraints, the provision of this service in oncology facilities remains inadequate and unsatisfactory. Conversely, government and professional advisory publications recommend a person-centred health approach that includes collaboration and communication between authorities, healthcare professionals and users (Dahlke et al., 2020; O'Daniel & Rosenstein, 2008).

## 1.5 RESEARCH QUESTIONS

The research question that emerged from the problem statement and gaps identified in the literature, as described in the previous sections, is:

> How can RTTs be supported and actively participate in facilitating sexual health for patients receiving radiotherapy for prostate cancer in radiation oncology?

The research subquestions are as follows.

1. What are the lived experiences of men after the diagnosis of prostate cancer and radiotherapy?
2. How did men experience the facilitation of supportive care for their sexual health in radiation oncology during and after radiotherapy for prostate cancer?
3. What are the perspectives of RTTs regarding their involvement in facilitating sexual health in patients receiving radiotherapy for prostate cancer?
4. What support do RTTs need to be involved in facilitating sexual health in radiation oncology?

## 1.6 RESEARCH AIM AND OBJECTIVES

This exploratory sequential mixed methods research aimed to develop a model to support the facilitation of men’s sexual health in patients receiving radiotherapy for prostate cancer in oncology settings. To achieve the aim of this research, the following six objectives were set out:

- To explore and describe the lived experiences of men after prostate cancer diagnosis and radiotherapy;
- To explore and describe the experiences of men regarding the facilitation of sexual health in radiation oncology during and after radiotherapy for prostate cancer;
- To identify the perspectives of RTTs regarding their involvement in facilitating sexual health in patients receiving radiotherapy for prostate cancer;
- To identify the support required by RTTs to facilitate sexual health in radiation oncology;
- To describe and evaluate a model to support the involvement of RTTs in facilitating SCMSH in patients treated for prostate cancer; and
- To propose guidelines to operationalise a model to facilitate SCMSH for patients receiving radiotherapy for prostate cancer in oncology settings.

## 1.7 OVERVIEW OF METHODOLOGY

The method chosen for this study is an exploratory sequential mixed methods study that applied exploratory, descriptive, interpretive phenomenological analysis, a survey and contextual designs. The population were men treated for prostate cancer with radiotherapy and RTTs working in radiation oncology departments at two selected hospitals in the Gauteng province of South Africa. Participants were purposively sampled, and data were collected in two phases: interviews in Phase 1 and self-administered questionnaires in Phase 2. In this exploratory sequential mixed methods study, the qualitative phase was given a higher priority than the quantitative phase, so the mixed methods notation for this study is referred to as QUAL → quan. In The data on experiences of patients treated for prostate cancer, gathered in Phase 1, informed the development of the quantitative survey instrument used in Phase 2. This survey targeted RTTs, to gather their perspectives on facilitating men’s sexual health during radiotherapy for prostate cancer. The qualitative data from Phase 1 were analysed using a six-step reflexive thematic analysis with ATLAS.ti 23 software. In Phase 2, quantitative data were analysed with descriptive statistics and cross-tabulation; Fisher’s exact test and SPSS Version 29 were employed to assess whether differences between key variables were statistically significant. Ethics clearance for the research was granted by the Faculty of Health and Wellness Sciences at the Cape Peninsula University of Technology and the Human Research Ethics Committee of the University of Witwatersrand (Medical School).

## 1.8 RESEARCH IMPACT

The implications of this study extend beyond healthcare and societal impact, aligning with the United Nations Sustainable Development Goal 3: Good Health and Well-Being, but also have an impact on the professional scope of practice for RTTs.

### 1.8.1 Good health and well-being

The findings of this study could enhance the quality of life and care experiences of men during and after prostate cancer treatment by promoting whole-person care that prioritises their sexual well-being and the quality of their intimate relationships.

### 1.8.2 Scope of practice for radiation therapists

This study highlights the need to redefine RTTs’ scope of practice to explicitly include providing sexual health support as part of routine care for patients receiving radiotherapy. It also amplifies the agenda of extending the role of RTTs in sexual health counselling for patients treated for cancer.

## 1.9 RESEARCH CONTRIBUTION

The unique contribution of this study lies in its development of a supportive care model that promotes the active involvement of RTTs alongside other oncology health professionals to facilitate men’s sexual health for patients receiving radiotherapy for prostate cancer. The model framework proposed in this study is among the first, if not the only one, to recognise and advance the role of RTTs in oncology care.

## 1.10 SUMMARY

Men with prostate cancer who are treated with radiotherapy, surgery, hormonal therapy or a combination of these treatments often experience erectile dysfunction, which causes a decline in sexual intimacy, leading to psychosocial challenges that could impact intimate relationships and marriages. This study addressed the knowledge gap in SCMSH for patients receiving radiotherapy for prostate cancer, particularly the role of RTTs, who generally do not include information on sexual health in patient counselling. This chapter introduced the research topic, background, problem statement, aims and objectives, methodology overview, research impact and contribution.

## 1.11 STRUCTURE OF THE THESIS

### Chapter 1: Overview and background

Chapter 1 provided an overview of the research study and background to the research problem of the studied phenomenon. In this chapter, the following research questions were answered:

- Why was this research topic important to pursue?
- What contribution does this study make to the field of radiation therapy?

### Chapter 2: Theoretical and conceptual framework

Chapter 2 will describe and contextualise the theoretical framework in terms of the theory and model underlying this research study. It will also present the conceptual framework developed for this study. Therefore, Chapter 2 will primarily answer this question: What theoretical and conceptual framework underpin the approach to this study?

### Chapter 3: Literature review

Chapter 3 will provide a justification to explain why the problem that was identified and the research gap are worthy of investigation. Therefore, the literature review seeks to address the following question: What does the existing and current research say about the research topic being studied?

### Chapter 4: Research design and methods

Chapter 4 will detail the mixed methods research design used for this study. It will delineate the procedures for selecting research participants, the data collection tools employed and ethics considerations. This chapter will address the following question: What research methods were used to explore the research problem, and for what reasons?

**Chapter 5: Qualitative findings (Phase 1)**

Chapter 5 will present the findings of face-to-face interviews with men who had been treated for prostate cancer with radiotherapy, which took place in Phase 1 of this study, to address the following question: How did men experience the facilitation of supportive care for their sexual health in radiation oncology during and after radiotherapy for prostate cancer?

**Chapter 6: Quantitative findings (Phase 2)**

Chapter 6 will present the findings of a quantitative survey to determine the perspectives of RTTs on the inclusion of discussions on sexual health in routine counselling for men treated for prostate cancer. This chapter will respond to the following question: What perspectives do RTTs have on the role of facilitating SCMSH in men undergoing radiotherapy for prostate cancer?

**Chapter 7: Integration of findings (Phases 1 and 2)**

Chapter 7 will integrate the findings of qualitative Phase 1 and the quantitative Phase 2, to discuss the findings and provide a nuanced understanding of the phenomenon under study. Therefore, this chapter will address the following question: What were the key findings of Phases 1 and 2 for this study?

**Chapter 8: Model development: Concept analysis**

Chapter 8 describes the meanings of concepts identified from Phase 1 and Phase 2, which underpin the development of a model to facilitate SCMSH. It answers the following question: What concepts did I select from the findings to inform the model development?

**Chapter 9: A model to facilitate supportive care for men’s sexual health**

Chapter 9 will describe the structure of the model, relationship statements, the feedback of the expert panel and operational guidelines. Therefore, this chapter will respond to the following question: What graphics did I use, and why, to illustrate the nature and process of the model?

### Chapter 10: Summary, recommendations and conclusions

Chapter 10 will provide responses to all the research questions of the study, present conclusions, strengths and limitations, and offer recommendations for future research and practice. Lastly, this chapter addresses the following question: What concluding remarks can be drawn from the study findings to advance sexual health support for patients receiving radiotherapy for prostate cancer through the model framework proposed?

# CHAPTER 2

# THEORETICAL AND CONCEPTUAL FRAMEWORK

*Human behaviour flows from three main sources:*
*desire, emotion, and knowledge*

Plato

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## 2.1 INTRODUCTION

Introducing new practices or modifying existing practices in healthcare settings to improve patient-specific care necessitates changes in healthcare professionals' individual and collective behaviours. Sometimes, oncology health professionals find it awkward to initiate sexual health dialogue with patients treated for prostate cancer. To change a given behaviour and develop effective interventions, it is necessary to have a theoretical understanding of the said behaviour. Therefore, improving SCMSH in patients receiving radiotherapy for prostate cancer in an oncology environment requires oncology health professionals to adopt collective behavioural changes regarding counselling about sexual health.

## 2.2 THEORETICAL FRAMEWORK

The theoretical framework adopted for this study is based on the whole-person care model, which was initiated by the New England School of Whole Health Education (Donadio, 2005), and the health promotion theory (Donadio, 2005; Department of Nursing Science, 2019). This framework guided the interpretation of research findings and supported the development of a model to facilitate SCMSH in the oncology setting. Caring for the whole person involves recognising the interconnectedness of biological, psychological and social factors that impact patients' well-being (Thomas et al., 2018). This framework was chosen to promote wholeness in the care of men with sexual function challenges following radiotherapy for prostate cancer. A central tenet of the whole-person care model is that a person has unique physical, mental, emotional and social patterns that are interconnected, inseparable and constantly evolving (Dubé, 2021; Thornton, 2005). Therefore, the dimensions of a human being cannot be overlooked during the routine care of patients with prostate cancer. Hence, the model to support the facilitation of men's sexual health assumes that men facing erectile function challenges during prostate cancer treatment require whole-person care (see Section 9.3.3), instead of receiving care that focuses solely on disease management. The theory of health promotion in nursing states that a whole person has dimensions of the body, mind, and spirit, which function in an integrated and interactive manner with the internal and external environment (Department of Nursing Science, 2019; Tones, 1993). Wholeness is the state of balance in a person's internal environment, which consists of the body (anatomical and physiological changes), mind (emotions and attitudes) and spirit (beliefs), which are integrated into the external environment (Department of Nursing Science, 2019). The theoretical assumptions of this study are that a patient with prostate cancer is a whole person with both internal and external environments. The internal environment of this patient works in an integrated manner with the external environment, comprising the physical (oncology department and resources) and social (family, spouse, friends, fellow patients and oncology health professionals) aspects with which the male patient interacts. The side effects of prostate cancer treatment and cancer itself can disrupt a patient's internal environment and interfere with their interaction with the external environment, as suggested by Tomljenović (2014). Finally, the present study argues that oncology health professionals should always embrace whole-person care when they are dealing with patients with cancer, to support them in achieving the concept of wholeness.

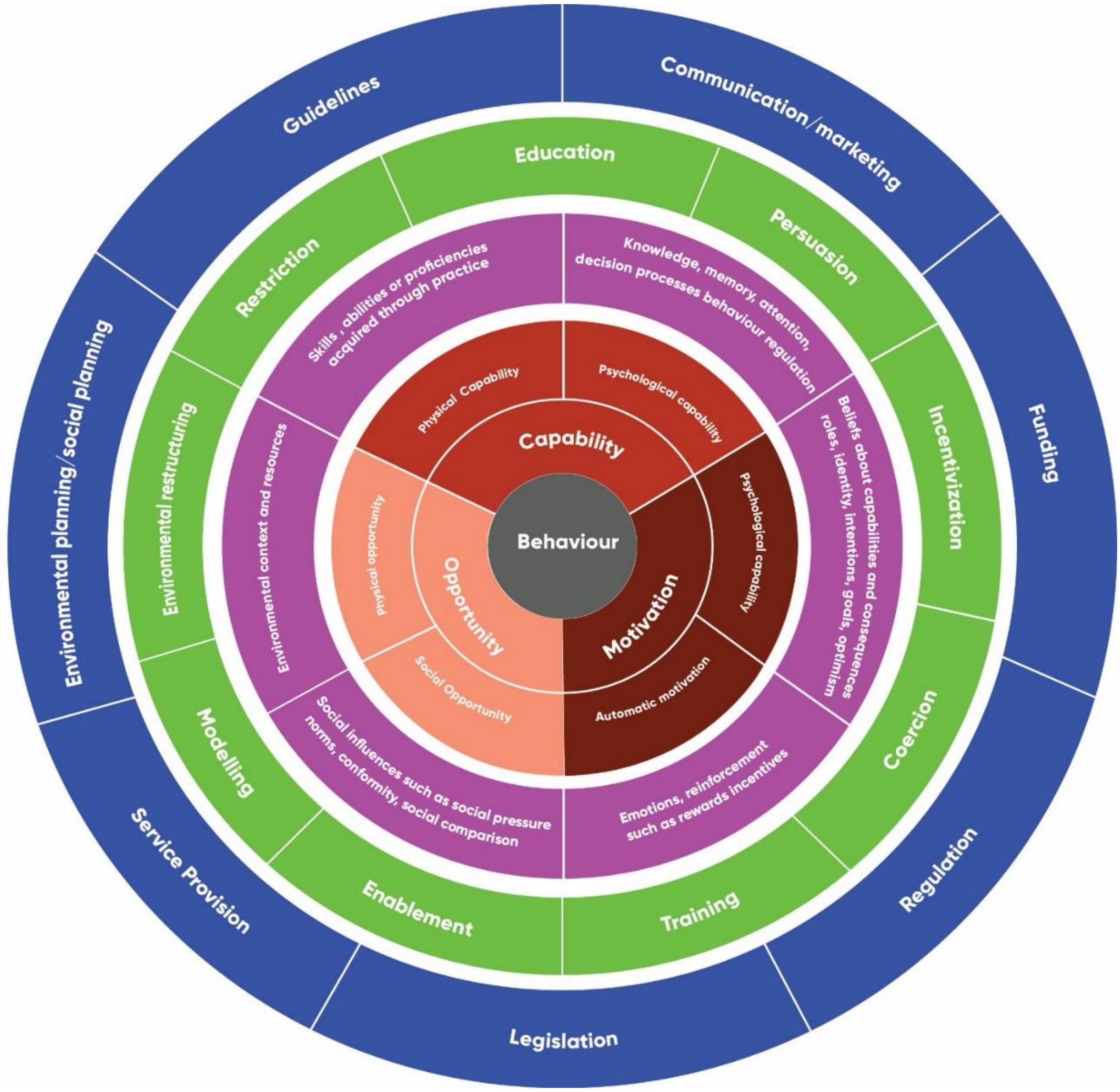
## 2.3 CONCEPTUAL FRAMEWORK

The conceptual framework of this study provides a visual representation of ways to design interventions to improve SCMSH in oncology. The BCW that was first developed by Michie et al., (2011) serves as the conceptual framework for the present study (see Figure 2.1). This conceptual framework was drawn from behavioural science theories (Hagger & Weed, 2019; St Quinton & Trafimow, 2022). The BCW framework has gained popularity for the development of interventions and has demonstrated efficacy in promoting behaviour change in diverse contexts, such as sexual counselling, medication management and auditory rehabilitation (Baker et al., 2010; McSharry et al., 2016; Sinnott et al., 2015). Therefore, adopting the BCW as a conceptual framework to drive change in the behaviours of oncology health professionals about SCMSH was deemed fit to improve whole-person care interventions in oncology settings.

The BCW tailored for this study comprises four levels, which were designed to understand the barriers and enablers of supportive care for facilitating men's sexual health in oncology. These levels are represented as concentric circles, beginning from the centre and extending outward, as illustrated in Figure 2.1. The first level of BCW cites the capability (C), opportunity (O), and motivation (M) constructs capable of changing the behaviour (B) of a person (Michie et al., 2011). The C, O, M, and B constructs constitute the COM-B model, which sits at the heart or centre of the BCW framework (see Figure 2.1). For this reason, the COM-B model asserts that behaviour results from the interplay of three essential factors: capabilities, opportunities, and motivation (Michie et al., 2011). The COM-B is widely used to identify what needs to change in an individual or environment before a behavioural change intervention is designed (Michie & West, 2015; West & Michie, 2020). The COM-B model will be discussed further in Section 2.4.

The theoretical domains framework (TDF) was used to study and understand factors that influence behaviour and to guide the design of effective behaviour change interventions (Atkins et al., 2017; Cane et al., 2012). The second level, the TDF, is embedded in the BCW to assess the cognitive, affective, social and environmental influences of designing interventions on behaviour (see Figure 2.1). The TDF consists of 14 domains, theorised as key to understanding change hurdles (Atkins et al., 2017; Cane et al., 2012); further details of the TDF are discussed in Section 2.5. These domains were mapped onto the BCW and linked to the COM-B model by the researcher. The third level consists of nine intervention functions to address identified, well-understood and described behaviour. These interventions are education, persuasion, incentivisation, coercion, training, enablement, modelling, environmental restructuring and restriction. However, coercion and restriction do not apply to the phenomenon being studied, as shown in Table 2.3.

Seven policy categories are defined at the fourth level, to support potential intervention functions that can induce behaviour change in the healthcare system and help transform practice at the health care provider level (see Table 2.4). These categories are communication or marketing, funding, regulation, legislation, service provision, environmental or social planning, and guidelines (Barker et al., 2016; Gould et al., 2017; Michie, 2014; Michie & West, 2015).



🟥 - COM B Model(sources of behaviour)- Healthcare provider level

🟪 - Theoretical domain framework - Healthcare provider level

🟩 - Invention functions - Organizational management level

🟦 - Policy categories - Governance level

**Figure 2.1: The behaviour change wheel (adapted from McDonagh et al., [2020] and Michie et al., [2011])**

The BCW, in the context of this study, operates on multiple levels to facilitate behavioural changes at the system or personal level, particularly within healthcare environments.

5. **COM-B model:** At the foundational level, the COM-B model is employed to understand and influence healthcare providers' behaviour. This model helps identify changes necessary regarding capabilities, opportunities and motivations to foster desired behaviours.
6. **Theoretical domains framework:** Building on the COM-B model, the second level uses the TDF to assess the cognitive, affective, social and environmental factors that affect healthcare providers' behaviour. This assessment focuses on organisational management aspects and identifies factors that can positively or negatively influence provider behaviour.
7. **Intervention functions:** The third level involves the application of nine intervention functions linked to organisational management. These functions are essential for designing and implementing interventions that aim to positively influence healthcare providers' behaviour, in this case, regarding SCMSH in oncology settings.
8. **Policy categories:** At the fourth level, the BCW examines policy categories related to the strategic governance of the healthcare industry, both clinically and professionally, through collaboration with the Ministry of Health and professional bodies to support behaviour changes among healthcare providers. This level focuses on policy revisions, including policy changes, scope of practice and funding models. These strategic measures at the governance level are integral to fostering an environment that supports positive behaviour change in health care providers concerning SCMSH in oncology settings. Therefore, by addressing these interconnected levels, the BCW provides a comprehensive framework to improve the behaviour of health professionals in oncology, particularly in the context of SCMSH in oncology settings.

## 2.4 INTERPRETATION OF CONCEPTUAL FRAMEWORK

The centre of BCW is the COM-B model, which asserts that behaviour results from the interplay of three essential factors: capabilities, opportunities, and motivation (Michie et al., 2011; see Figure 2.1). The first level of BCW involves the application of the COM-B model to understand and characterise the attitudes of patients, health care providers, managers, authorities and educators towards the sensitive health problems of patients (Cassidy et al., 2019; Michie, 2014; West & Michie et al., 2020). In the context of this study, for oncology health professionals to engage in a particular behavioural change (e.g., changing their attitudes towards sexual health), they must be (1) psychologically and physically able to do so (2) have physical and social opportunities, and (3) want or need to engage in the behaviour (McDonagh et al., 2020).

### 2.4.1 Components of the COM-B model

The COM-B is a model used to understand why certain behaviours occur in a person or environment in terms of capability (C) (psychological—knowledge, physical—skills), opportunity (O) (social—societal influence, physical—environmental resources) and motivation (M) (automatic, emotion, reflective, beliefs about capabilities) (Michie, 2014; Michie et al., 2011; Michie & West, 2015). Figure 2.2 shows that capabilities and opportunities can influence motivation. The three factors, C, O, or M not only bring about behavioural change but can also be influenced by the resulting behaviour change; therefore, there is often a feedback loop from behaviour change to C, O, or M change (Mayne, 2019). This model posits that, for a person to participate in each behaviour (B), they must be physically and psychologically capable (C) of utilising social and physical opportunities (O) via motivators (M) that are reflective or automatic (Barker et al., 2016). An example of the determinants of behavioural change for enhancing the facilitation of sexual health in the context of this study, utilising the C, O, and M factors, is described in sections 2.4.1.1 to 2.4.1.3. Figure 2.2 presents the COM-B model adapted to alter the attitudes of oncology health professionals toward men’s sexual health care.

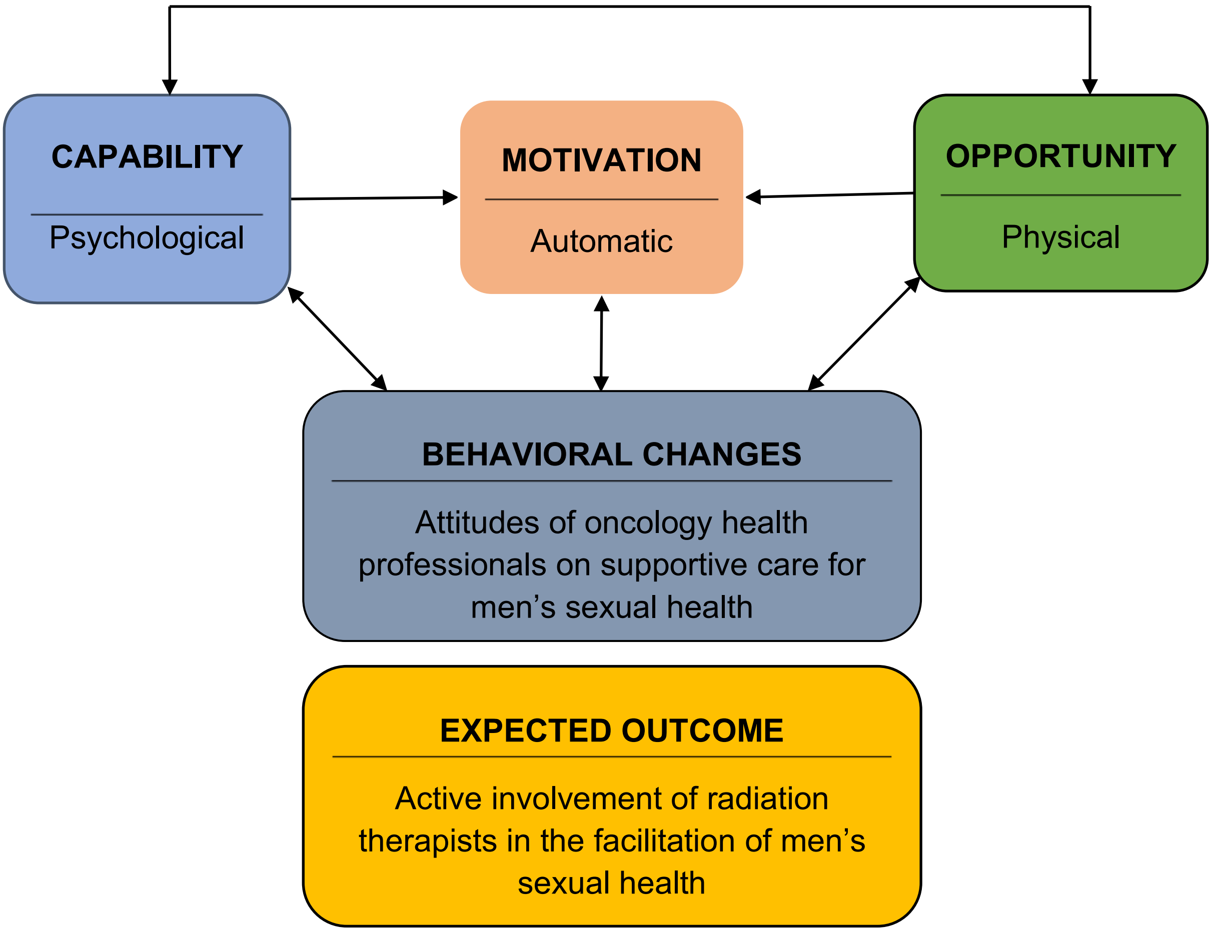


**Figure 2.2: The COM-B model to improve the attitude of oncology health professionals toward men's sexual health care (adapted from Jatau et al., [2019])**

#### *2.4.1.1 Capability*

Capability, along with opportunity, enables or facilitates behaviour. Capability includes psychological and physical abilities. Psychological capability involves cognitive and emotional strengths, such as knowledge, confidence and cognitive function, to engage in behaviour. For example, oncology health professionals who possess the requisite knowledge of the sexual health of men with prostate cancer may attempt to facilitate sexual health dialogue with patients. However, knowledge alone does not necessarily translate into positive behaviour. Physical capability is the capacity that enables a person to perform a behaviour (e.g., training, capacity, and environmental resources) (Cassidy et al., 2019; Michie, 2014; Michie et al., 2011). For instance, oncology health professionals suffering from physical fatigue or exhaustion due to a heavy workload may have reduced physical ability to communicate effectively and devote time to offer psychosocial support to patients. An oncology health professional who has acquired skills or proficiencies in sexual health counselling through practice has the chance to influence positive behaviour to provide supportive care to facilitate male sexual health.

#### *2.4.1.2 Opportunity*

Opportunity is an attribute of an environment that, together with capability, inhibits or facilitates behaviour. This attribute includes physical and social opportunities that enable or inhibit behaviour. Physical opportunity involves environmental context and resources (e.g., time, location and material resources). Social opportunity is a social factor that influences how we think and live (e.g., stigma, culture and social norms) (Cassidy et al., 2019; Michie, 2014; Michie et al., 2011). Opportunities to attend training on sexual health counselling should be made available to oncology health professionals. Moreover, oncology health professionals should provide sufficient time for patient counselling to overcome time-constraint barriers.

#### *2.4.1.3 Motivation*

Motivation is an aggregate of mental processes that energise and engage in direct behaviour. Reflective motivation refers to the cognitive processes that influence a person’s motivation to engage in a behaviour (e.g., plans and evaluations) and, for example, evaluating the costs and benefits of a particular behaviour, reflect on past experiences, beliefs about abilities, perceptions of sexual health and goal setting. Automatic motivation refers to the emotional and habitual processes that drive an individual’s behaviour (e.g., desire and habits) (Michie, 2014; Michie et al., 2011; West & Michie, 2020). For example, receiving positive patient feedback on patient care can instil a sense of pride and accomplishment in oncology health professionals, motivating them to enhance their efforts. Likewise, oncology health professionals need to be motivated to initiate conversations about sexual health issues with their patients. However, fear of discomfort or embarrassment may impair their motivation to participate actively. Thus, the motivating factor in the COM-B model advocates for creating a supportive environment and incentivising these discussions to improve the motivation to facilitate conversations about sexual health. Figure 2.1 illustrates the interactions between the COM-B model components for improving supportive care and sexual health facilitation.

### 2.4.2 Practical application of the COM-B model

The behavioural diagnosis of the phenomenon under study was derived from other studies, such as those by Asimakopoulou et al., (2022) and Gould et al., (2017), the findings of my Master's research project (Phahlamohlaka, 2017), and my clinical experience. This assumption suggests that RTTs may encounter difficulties when starting discussions about sexual health with male patients undergoing treatment for prostate cancer in radiation oncology, possibly because the therapists feel less than confident because of their perceived limitations in both physical and psychological capabilities. Social factors such as gender, culture and religion have been identified as potential influences on sexual health counselling provided by RTTs (social opportunity) in this study. Although RTTs have the physical opportunity to initiate sexual health conversations with patients during radiotherapy, they may not always be motivated to do so. Thus, to establish a habitual culture of routine sexual health counselling, it may be necessary to consider reflective and automatic motivators that can help overcome potential barriers and facilitate this practice. Table 2.1 exemplifies how the COM-B model can be applied to identify and classify organisational and personal behaviours to improve men's sexual health care.

**Table 2.1: Application of COM-B model to identify organisational and personal behaviours to improve men’s sexual health care (Adapted from Jatau et al., [2019])**

| Capability | Opportunity | Motivation |
|---|---|---|
| Individual’s psychological and physical capability to engage in the activity concerned. | Opportunity is an attribute of an environmental system that, together with capability, inhibits or facilitates a behaviour. | All the brain processes that energise and direct behaviour. |
| Psychological | Physical | Reflective |
| Capacity of a person to engage in the necessary thought | Opportunity determined by environmental context and resource change | Conscious thought processes that influence an individual's motivation to engage in a behaviour |
| • Education level<br>• Cognitive function<br>• Knowledge of men’s sexual health<br>• Awareness and information<br>• Self-confidence and readiness | • Availability of time and resources<br>• Access to workshops and training courses<br>• Design of infrastructure for oncology | • Perceptions about sexual health<br>• Attitudes and beliefs<br>• Past experiences with patients<br>• Potential discomfort and embarrassment<br>• Review of scope of practice<br>• Access to credible sources of information |
| Physical | Social | Automatic |
| Capacity of a person to perform a behaviour | Opportunity determined by personal and social factors change | Non-conscious processes that influence an individual's motivation to engage in a behaviour |
| • Scope of practice<br>• Burn-out<br>• Language proficiency<br>• Time constraints<br>• Workload challenges | • Culture and religion<br>• Opposite gender<br>• Age disparity between patients and oncology health professionals<br>• Social stigma and norms (sex taboo)<br>• Judgement from oncology health professionals<br>• Sexual orientation | • Fear of causing offence<br>• Fear of causing embarrassment<br>• Fear of opening a can of worms<br>• Fear of being accused of sexual harassment<br>• A desire to provide psychosocial support<br>• Incentivisation for a positive behaviour |

In practical terms, COM-B is a diagnostic tool that sex therapists can use to identify sexual health problems before they offer interventions. The tool helps pinpoint which behaviours need to change to improve supportive care in male sexual health facilitation. While COM-B is traditionally used to identify, understand and predict behaviours, it does not provide guidance for designing behavioural interventions (Brug et al., 2005; Kok et al., 2004). Therefore, nine intervention functions were added to the BCW to frame the research problem through intervention functions.

### 2.4.3 Theoretical domain framework

In building on the COM-B model, TDF is used at the second level (see Figure 2.1) to assess the cognitive, affective, social and environmental factors that influence the behaviour of healthcare providers. The TDF is essential because it examines the underlying factors that influence behaviour and enables a comprehensive understanding and targeted interventions. The TDF does not explain how change occurs but provides a list of factors that could potentially influence a particular behaviour (Nilsen, 2015). The initial version of the TDF integrated 33 psychological theories that are relevant to behavioural change into 128 constructs (components/parts of theories) that were sorted into 12 domains (a broad area or concept where a theory applies, for example, motivation) (Khan & Roche, 2022). In 2012, the TDF was revised and validated and now consists of 84 constructs sorted into 14 domains, as described in Table 2.2 (Atkins et al., 2017; Cane et al., 2012; Michie et al., 2011). The revised TDF helps researchers identify barriers and facilitators that influence behaviour and desired changes, incorporating social and environmental factors beyond individual beliefs and motivations (Khan & Roche, 2022). Therefore, I embedded the TDF within the BCW, as shown in Figure 2.1. The TDF embedded in the BCW serves as a theoretical window for examining the cognitive, affective, social and environmental factors that influence the behaviour of oncology health professionals towards providing SCMSH facilitation in oncology (Atkins et al., 2017). These 14 TDF domains guided the analysis of the concepts drawn from the current study's findings (see Table 2.2) to develop a model to facilitate SCMSH in oncology settings.

**Table 2.2: The theoretical domain framework (Atkins et al., 2017; Cane et al., 2012)**

| Domain | Constructs |
|---|---|
| 1. Knowledge<br>*(An awareness of the existence of something)* | Knowledge (including knowledge of condition/scientific rationale)<br>Procedural knowledge<br>Knowledge of task environment |
| 2. Cognitive and interpersonal skills<br>*(An ability or proficiency acquired through practice)* | Skills<br>Skills development<br>Competence<br>Interpersonal skills<br>Practice skill assessment |
| 3. Social/professional role and identity<br>*(A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting)* | Professional identity<br>Professional role<br>Social identity<br>Identity professional boundaries<br>Professional confidence<br>Group identity<br>Leadership<br>Organisational commitment |
| 4. Beliefs about capabilities self-confidence<br>*(Acceptance of the truth, reality, or validity about an ability, talent, or facility that a person can put to constructive use)* | Self-perceived competence<br>Self-efficacy<br>Perceived behavioural control<br>Beliefs self-esteem<br>Empowerment<br>Professional confidence |
| 5. Optimism<br>*(The confidence that things will happen for the best or that desired goals will be attained)* | Optimism<br>Pessimism<br>Unrealistic<br>Optimism<br>Identity |
| 6. Beliefs about consequences beliefs<br>*(Acceptance of the truth, reality, or validity about outcomes of behaviour in each situation)* | Beliefs<br>Outcome expectancies<br>Characteristics of outcome and expectancies<br>Anticipated regret consequents |

| Domain | Constructs |
|---|---|
| 7. Reinforcement<br>*(Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus)* | Rewards<br>Incentives<br>Punishment<br>Consequents<br>Reinforcement<br>Contingencies<br>Sanctions |
| 8. Intentions<br>*(A conscious decision to perform a behaviour or a resolve to act in a certain way)* | Stability of intentions<br>Stages of change model<br>Transtheoretical model and stages of change |
| 9. Goals<br>*(Mental representations of outcomes or end states that an individual wants to achieve)* | Goals (distal/proximal)<br>Goal priority<br>Goal/target setting<br>Goals (autonomous / controlled)<br>Action planning<br>Implementation intention |
| 10. Memory, attention, and decision processes<br>*(The ability to retain information, focus selectively on aspects of the environment and choose between two or more alternatives)* | Memory<br>Attention<br>Attention control<br>Decision-making<br>Cognitive overload/tiredness |
| 11. Environmental context and resources<br>*(Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence, and adaptive behaviour)* | Environmental stressors<br>Resources / material resources<br>Organisational culture /climate<br>Salient events / critical incidents<br>Person x environment interaction<br>Barriers and facilitators |
| 12. Social influences<br>*(Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours)* | Social pressure<br>Social norms<br>Group conformity<br>Social comparisons<br>Group norms<br>Social support<br>Power<br>Intergroup conflict<br>Alienation<br>Group identity<br>Modelling |

| Domain | Constructs |
|---|---|
| 13. Emotion<br>*(A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter)* | Fear<br>Anxiety<br>Affect<br>Stress<br>Depression<br>Positive / negative affect<br>Burn-out |
| 14. Behavioural regulation<br>*(Anything aimed at managing or changing objectively observed or measured actions)* | Self-monitoring<br>Breaking habit<br>Action planning |

### 2.4.4 Intervention functions and policy categories

The sensitivity to initiating sexual health dialogue with male patients appears to result from complex interactions involving personal factors, social dynamics, knowledge gaps, training, scope of practice, and environmental factors. Therefore, dealing with these factors is necessary to bring about interventions to improve whole-person care practices in the oncology environment. Table 2.3 outlines the intervention functions to target changes in the behaviour of oncology health professionals toward male sexual health.

**Table 2.3: Interventions targeting oncology health professionals' behaviour (adapted from Michie et al., [2011])**

| Interventions | Definitions | Behavioural change techniques |
|---|---|---|
| Education | Increasing knowledge or understanding | Provide educational materials<br>Promote interdisciplinary education and professional practice |
| Persuasion | Use communication to create positive or negative feelings or stimulate action | Create sexual health awareness<br>Share success stories of a new practice |
| Incentivisation | Creating an expectation of reward | Use incentives to reward best practices |
| Coercion | Creating an expectation of punishment or cost | Not applicable |
| Training | Imparting skills | Organise training workshops |
| Restriction | Using rules to reduce or increase the opportunity to engage in the target behaviour | Not applicable |

| Interventions | Definitions | Behavioural change techniques |
|---|---|---|
| Environmental change | Changing the physical or social context | Standardise consultation practices<br>Reorganise the physical environment |
| Modelling | Providing an example for people to aspire to or imitate | Identify yourself as a role model<br>Share videos of experts as role models |
| Enablement | Increasing means/reducing barriers to increase capability or opportunity | Initiate interactive workshops to break barriers among health professionals |

There is a direct link between the intervention functions and policy categories that target healthcare system behaviour. The policy categories presented in Table 2.4 were intellectualised to impact healthcare system behaviour at the governance level.

**Table 2.4: Policy categories targeting oncology healthcare system behaviour (Adapted from Michie et al., [2011])**

| Categories | Definitions | Behavioural delivery techniques |
|---|---|---|
| Environmental/ social planning | Designing and/or controlling the physical or social environment | Make information accessible<br>Apply existing models for routine sexual health screening |
| Guidelines | Creating documents that recommend or mandate practice, including all changes to service provision | Develop guidelines to recommend supportive care practices for male sexual health<br>Develop interdisciplinary practice guidelines |
| Funding | Making funding for skills and training development | Fund psychosocial support services<br>Award of bursaries to trainees<br>Avail skills for development courses |
| Regulation | Establishing rules or principles of behaviour or practice | Review the scope of practices<br>Recognise role extension practices |
| Legislation | Making or changing laws | Align healthcare policies with all other related policies to improve service delivery |
| Service provision | Delivering a service | Support ongoing professional development seminars |
| Communication/ marketing | Creating awareness | Publication of notices from professional bodies on relevant (hot) topics |

The policy categories presented in Table 2.4 aim to shape health system behaviour to achieve policy transformation and foster behavioural changes among oncology health professionals, including behaviour related to counselling patients about sexual health. The overarching aim of this study was to develop a model to enable oncology health professionals to address gaps in SCMSH in patients undergoing prostate cancer treatment, to enhance whole-person care. Table 2.5 contains information related to prior knowledge of the phenomenon being studied, professional practice and similar studies using the COM-B model and intervention functions (Abubakar et al., 2017; Cassidy et al., 2019; Gould et al., 2017). The COM-B model and intervention functions in the BCW framework, shown in Figure 2.1 are contextualised in Table 2.5 to outline interventions to improve sexual health support for men’s sexual health in oncology settings.

**Table 2.5: Application of behavioural change wheel to define interventions to improve men’s sexual health care in oncology (Adapted from Jatau et al., [2019])**

| **COM-B**<br>Capability | Intervention Targets | Intervention Functions:<br>Training, Education and Enablement |
|---|---|---|
| Psychological | • Lack of research appetite<br>• Lack of whole-person care guidelines in oncology<br>• Unclear interprofessional collaborative practice in oncology<br>• Low priority of sexual health education inclusion oncology curricula<br>• Non-involvement of OHPs in community cancer screening<br>• Lack of structured cancer awareness and screening programmes<br>• Lack of extensive research data on the role of RTTs in facilitating supportive care for patients with sexual health issues | • Promote research engagement on sexual health for patients with cancer<br>• Develop a work culture of person-centred care practices<br>• Implement better ways to screen sexual health using existing models routinely<br>• Provide training workshops on sexual health care and interprofessional education<br>• Integrate sexual health in curricula for oncology studies |
| Physical | • Accessibility to training workshop opportunities<br>• Inconsistent involvement of OHPs in sexual health counselling<br>• Difficulty in initiating sexual health dialogue<br>• Lack of research outputs on sexual health topics in cancer care | • Train OHPs on how to initiate sexual health dialogue<br>• Consider sexual health as part of routine care<br>• Review the scope of practices for OHPs<br>• Make funds available for sexual health studies |

| Opportunity | | Environmental Restructuring and Enablement |
|---|---|---|
| Physical | • Accessibility of printed or electronic educational material<br>• Lack of multilingualism in the oncology clinics<br>• Time and resource constraints<br>• Accessibility to sexual health care services<br>• Busy oncology clinics and staff shortages<br>• Oncology infrastructure design | • Improve the availability of information leaflets<br>• Employ a workforce from diverse backgrounds<br>• Capacitate departments with trained personnel<br>• Make sexual health counselling routine practice<br>• Reimagine and redesign oncology facilities |
| Social | • Perception of sexual health as taboo<br>• Age and gender barriers<br>• Culture and religious barriers<br>• Limited screening programmes | • Demystify the topic of sexual health as taboo<br>• Create a work environment that embraces cultural and religious diversity |
| Motivation | | Incentivisation, Modelling And Persuasion |
| Reflective | • Self-doubts about competence<br>• Lack of clarity on role profiles in sexual health counselling<br>• Fear of being accused of sexual harassment<br>• Fear of causing embarrassment<br>• Discomfort of initiating sexual health dialogue | • Introduce short learning courses on advanced patient counselling<br>• Clarify the roles of OHPs in sexual health facilitation<br>• Reward frontline agents of change<br>• Use credible people to inspire change in patient care<br>• Make role-play videos to sensitise OHPs about male sexual health |
| Automatic | • Lack of interest in facilitating SCMSH<br>• Lack of mechanisms and incentives to promote sexual health care<br>• Awareness of men’s sexual health issues among OHPs | • Present workshops on psychosocial care for oncology patients<br>• Normalise routine sexual health screening<br>• Stimulate the interest of OHPs to participate in community cancer education programmes<br>• Produce emotive simulated videos on SCMSH<br>• Make funding available for bursaries |

Note: OHP: Oncology health professional

## 2.5 SUMMARY

This chapter presented the theoretical and conceptual frameworks that underpin this study. The whole-person care model and health promotion theory are the theoretical frameworks that underpinned the development of a model to facilitate SCMSH in patients undergoing radiotherapy for prostate cancer. Moreover, the COM-B model is at the heart of the revised BCW conceptual framework. This conceptual framework offered guidance on achieving behavioural change at both the system and personal levels in oncology, to address the absence of supportive sexual health care for patients undergoing cancer treatment. Chapter 3 will present a literature review of the phenomenon under study.

# CHAPTER 3

# LITERATURE REVIEW

*Everything happens within a context. If you don't understand the context, you can't interpret and explain events.*

Prof. Frank Donough

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## 3.1 INTRODUCTION

To enhance person-centred care (PCC) during radiotherapy, it is essential to address the sexual health challenges facing men diagnosed and treated for prostate cancer (Grondhuis Palacios et al., 2018; Li et al., 2022; Steginga et al., 2001). However, the supportive care model for men's sexual health proposed in this study (see Figure 9.1) transcends PCC and emphasises whole-person care (Section 2.2) of patients treated for prostate cancer in oncology. This chapter presents findings from the literature review that are relevant to the phenomenon examined in this study, thereby justifying the need for SCMSH in oncology settings. The chapter reviews current and past publications on the topic and examines existing models of sexual health care to address the identified knowledge gap. The chapter also contributes a modification of the 5 A's framework of behavioural change to help oncology health professionals facilitate sexual health dialogue with cancer patients.

Key topics in this literature review are the methodology for conducting literature reviews, identification of knowledge gaps, patient experiences after prostate cancer treatments, interventions for erectile dysfunction, sexual health counselling frameworks, supportive care in oncology, the role of RTTs in sexual health counselling and the application of the 5 A's behavioural change framework for facilitating sexual health dialogue. These topics provide a comprehensive context for the research problem and central argument and are linked to research objectives.

## 3.2 APPROACH TO LITERATURE REVIEW

This literature review used narrative and integrative approaches to analyse past and current literature on the research topic. A narrative literature review was done to understand barriers and enablers to sexual health counselling in oncology. An integrative literature review was used to synthesise new perspectives on PCC in relation to sexual health in oncology settings. Finally, a literature search was conducted between March 2020 and June 2024 using various electronic databases, including MEDLINE, CINNAHL, PubMed, Web of Science, APA PsycINFO, and Google Scholar. The keywords, words or phrases used to conduct the literature survey included "erectile dysfunction", "men's sexual health", "prostate cancer", "radiation therapists", "radiotherapy", "sexual health care models", "sexual health counselling", "sexual health dialogue", and "supportive care".

## 3.3 ARTICULATION OF THE KNOWLEDGE GAP

Supportive care for men's sexual health and related psychosocial issues in patients receiving radiotherapy for prostate cancer seems to lack continuity in oncology settings. Initiating dialogue about sexual health issues in oncology settings remains challenging for oncology health professionals working with patients with cancer, leading to gaps in supportive care for sexual health (Krouwel et al., 2019; Kuan et al., 2023; Mercadante et al., 2010). Furthermore, the involvement of RTTs in facilitating sexual health counselling is unclear and not well understood in the South African context. Patients who are receiving radiotherapy for prostate cancer are willing to share their sexual health concerns, but communication barriers exist that stand in the way of oncology health professionals from addressing patients' sexual health challenges (Dai et al., 2020; Hordern & Street, 2007b; Phahlamohlaka, 2017; Sporn et al., 2015). These communication barriers often leave patients with unmet sexual health needs during radiotherapy for prostate cancer, stemming from a mismatch between what patients need and what oncology health professionals can provide. Several studies highlight the need to address the lack of conversations about sexual health issues in cancer care (Grondhuis Palacios et al., 2019; Krouwel et al., 2019; McCaughan et al., 2020). In summary, SCMSH during or after radiotherapy for prostate cancer, is reported to be deficient, as experienced by patients.

## 3.4 EXPERIENCES OF MEN AFTER PROSTATE CANCER TREATMENT

There is a 50% likelihood that patients who have undergone radiotherapy and/or prostatectomy for prostate cancer will experience erectile dysfunction (Faiena et al., 2014). Erectile dysfunction leads to men experiencing sexual distress, and erectile dysfunction can be worsened by age, hormonal manipulation, previous pelvic surgery and diabetes mellitus (Incrocci & Jensen, 2013; Malavige & Levy, 2009). The treatment of gender-specific cancer diagnoses, such as prostate cancer, has significant implications for sexual health and well-being, which range from physiological to emotional and psychological effects (Galbraith & Crighton, 2008; Mainwaring et al., 2021). Patients with cancer who receive pelvic radiotherapy are usually vulnerable to psychosocial distress, which could eventually lead to sexual dysfunction and the deterioration of their psychological well-being (Sharpley et al., 2008). Sexual dysfunction has a multifaceted aetiology that includes physiological (erectile dysfunction) side effects of cancer and its treatments, and psychological (stress), and sociocultural (masculinity) factors that do not always require the use of pharmacological interventions (Shepherd et al., 2010). Cormie et al., (2013) suggest that the optimal treatment approach for sexual dysfunction involves incorporating medical drugs (pharmacological agents), physical therapy (an exercise programme) and psychological interventions. Therefore, this study advocates for oncology health professionals to include communication about sexual health in routine patient counselling of patients with prostate cancer.

## 3.5 SEXUAL HEALTH COUNSELLING FRAMEWORKS

Providing an overview of frameworks for sexual health counselling in clinical settings is essential for linking current research with previous studies on the phenomenon being studied, thereby contextualising the “golden thread” or central argument of this thesis (see Section 1.1). A literature review shows that various sexual health care models have been proposed and tested in clinical settings to improve communication about sexual health (McCaughan et al., 2020; Mick et al., 2004). The most common frameworks for sexual health communication are the EX-PLISSIT and BETTER approaches. The extended permission, limited information, specific suggestion, intensive therapy (EX-PLISSIT) model, and its predecessor, PLISSIT, have received the most attention (Daneshfar et al., 2017; Taylor & Davis, 2007). The PLISSIT framework uses a step-by-step counselling approach. For example, it uses a non-judgmental listening approach to determine a patient's information needs. The PLISSIT model involves asking for or giving patients Permission to discuss sexual well-being; giving Limited Information about sexual side effects of treatment; making Specific Suggestions based on a full evaluation of current problems and providing or referring to more Intensive Therapy, including psychosexual support. It aims to increase engagement and intensity of counselling (Taylor & Davis, 2006). The core feature of the EX-PLISSIT framework is granting permission at every level of intervention when dealing with patients (Daneshfar et al., 2017). Another feature of the EX-PLISSIT framework, which is an extension of the PLISSIT model, is the requirement to include reflection and feedback after all interventions (Taylor & Davis, 2007).

The BETTER framework uses behavioural and person-based methods, including reminders or prompts, problem-solving techniques and planning notes in patients' clinical records (Mick et al., 2004). The BETTER model may also help oncology health professionals incorporate sexual well-being assessments into their cancer care (McCaughan et al., 2020). The BETTER model includes Bringing Up the topic of sexual concerns, Explaining or normalising the topic (framing it as an essential quality-of-life issue), Telling the patient about resources for addressing any sexual concerns, considering Timing (by ensuring discussions account for patients' readiness to talk about sexual issues), providing Education, including information on side effects of treatment and, lastly, Recording or documenting the assessment, treatment, outcome and follow-up plans (McCaughan et al., 2020; Quinn & Happell, 2012).

Additionally, the EASSi framework was recently added to the body of literature to improve communication on sexual well-being in routine prostate cancer care (McCaughan et al., 2020). EASSi, representing Engagement (E), Assessment (A), Information and Support (S), and Sign-posting (Si), offers a structured approach to discussions on sexual well-being, by ensuring that personalised support is consistently integrated into routine care for patients with prostate cancer (McCaughan et al., 2020). The nature of this framework is reminiscent of the EX-PLISSIT model.

The sexual health communication frameworks described in this section form a solid foundation for taking PCC to greater heights, specifically for patients receiving treatment for prostate cancer in oncology settings. Person centred care prioritises each patient’s uniqueness by offering personalised, respectful, unbiased and timely care and ensuring that patients are directed to appropriate support services (McCormack & McCance, 2016; Mills, 2017; Santana et al., 2018). Arguably, the supportive care model for men’s sexual health proposed by this study transcends PCC by promoting whole-person care for patients being treated for prostate cancer in oncology settings, to ensure that a patient’s preferences, needs, values and emotional, mental, spiritual and social aspects are taken into account during cancer treatment to achieve wholeness.

## 3.6 SUPPORTIVE CARE FOR SEXUAL HEALTH IN ONCOLOGY

Sexual health is an essential component of care for patients with cancer. However, oncology health professionals often overlook this component during patient counselling in oncology clinics (Dyer & Ddas Nair, 2013). Sexuality is not treated as a medical concern, instead, the priority is treating cancer or symptoms (Mercadante et al., 2010). In the context of this study, sexual health counselling or facilitation is an area of sexual health care that refers to facilitating communication about sexual health issues between patients and oncology health professionals, including RTTs. In this study, the term sexual health facilitation is used interchangeably with sexual health counselling, which is defined as integrating sexual health dialogue into routine patient counselling that is facilitated by RTTs, as prescribed in the Health Professions Act No.56 of 1974, which defines the scope of the radiography profession in South Africa.

According to Turner and Nathoo (2019), providing care to patients with cancer through RTTs is not only about focusing on the illness, administering radiation dose prescriptions or applying treatment techniques. It also encompasses striving to achieve holistic well-being for patients. Hence, the scope of radiography endorses RTTs reassuring and counselling patients about radiotherapy, including side effects associated with sexuality (Department of Health, 2016). Furthermore, a radiation therapist could adopt a person-centred approach to deliver patient-sensitive healthcare services based on a rich understanding of a patient’s circumstances and needs. A study conducted by Hautamäki et al., (2007) identified practical barriers to offering sexual health counselling in oncology clinics, such as the demanding workload of staff in these clinics and biased attitudes of oncology health professionals towards the sexuality of older patients.

Initiating a dialogue with patients about sexual health is generally challenging because of an interplay of the following factors: cultural and religious beliefs, race, gender, sexual orientation, personal attitudes, public opinion and social norms that must be carefully considered (Schnabel, 2018). These factors are often associated with barriers that hinder the provision of supportive care for sexual health in oncology settings. Several authors have identified barriers faced by oncology health professionals in addressing male sexual health, including fear of initiating the topic, limited time, resources, and training, concerns about knowledge and skills, fear of causing offence, personal discomfort and lack of awareness about sexuality issues (Dyer & das Nair, 2013; O'Connor et al., 2019; Phahlamohlaka & Mdletshe, 2022). Furthermore, stigma and societal taboos, limited understanding and awareness, financial constraints, accessibility issues, cultural and religious barriers, privacy concerns and too few adequately trained health professionals exacerbate these barriers. These challenges are not confined to oncology but extend across other areas of healthcare (Flynn et al., 2012; Krouwel et al., 2019; Phahlamohlaka & Mdletshe, 2022).

## 3.7 INTERVENTIONS TO CARE FOR ERECTILE DYSFUNCTION

Male patients may experience challenges related to erectile dysfunction after prostate cancer diagnosis and treatment. The standard treatments for prostate cancer include surgery, hormonal treatment and radiotherapy (Howlett et al., 2010; Krouwel et al., 2019; Resnick et al., 2013). Sexual function is an essential aspect of quality of life for men; therefore, addressing sexual health challenges should be a key part of the care of patients who are treated for prostate cancer (Resnick et al., 2013; Walker & Santos-Iglesias, 2020). Interventions for erectile dysfunction include pharmacological and non-pharmacological therapies (Carter et al., 2018; Mazzilli, 2022). These therapies include sexual therapy, education, drugs, vacuum erection devices, penile injections and penile implants, as presented in Table 3.1. However, not all of these interventions are appropriate for every patient, and treatment should be individualised according to a patient's specific needs and preferences.

**Table 3.1: Interventions to care for men with erectile dysfunction(Atallah et al., 2021; Pang et al., 2023; Wespes et al., 2013; Yafi et al., 2016)**

| Intervention | Description |
|---|---|
| Education | Providing information on the potential sexual side effects of prostate cancer and strategies to manage these side effects. |
| Medications | Prescription drugs such as sildenafil (Viagra), tadalafil (Cialis), and vardenafil (Levitra) may help relieve erectile dysfunction. |
| Penile injections | Injection of drugs, such as alprostadil, into the penis to produce an erection. |
| Vacuum devices | A mechanical device that creates a vacuum around the penis, causing blood to flow in and produce an erection. |
| Penile prostheses | Surgical implants can be placed in the penis to produce an erection. |
| Couples counselling | Therapy that involves both partners to address sexual issues, communication and intimacy. |
| Sexual therapy | A type of counselling that focuses specifically on treating sexual issues and improving sexual function. |
| Referral to specialists | Referring patients to specialists trained in sexual health, such as urologists or sex therapists. |

## 3.8 MULTILEVEL APPROACH TO MALE SEXUAL HEALTH CARE

Phahlamohlaka and Mdletshe (2022) describe multilevel interventions to address sexual health challenges facing men with prostate cancer. O’Connor et al., (2019) highlight that barriers and facilitators to addressing sexual health require interventions that consider organisational, structural and personal factors. Successful interventions need concerted efforts by oncology health professionals, policymakers and community members to raise awareness, provide education and support and improve access to sexual health services.

**Table 3.2: Multilevel approach to address sexual health care gaps in oncology (adapted from Phahlamohlaka & Mdletshe [2022])**

| Levels | Interventions | Intended goals |
|---|---|---|
| **Patient level** | Convey sexual health information in multiple languages<br>Make spousal counselling a norm in oncology care | Enhance PCC<br>Develop multilingual oncology clinics<br>Restore relationships of partners affected by cancer |
| **Peer level** | Recognise and involve cancer support groups in cancer treatment plan | Promote peer-support counselling<br>Bring hope to patients with cancer |
| **Provider level** | Create awareness to change the attitudes of oncology health practitioners<br>Avail opportunities for in-service training workshops<br>Implement practice guidelines for sexual health counselling | Destigmatise sexual health as a taboo<br>Advance aptitude of oncology health practitioners in patient counselling<br>Clarify the clinical roles of all oncology health practitioners |
| **System level** | Empower oncology health practitioners with relevant resources<br>Integrate sexual health oncology into educational curricula<br>Integrate men’s health clinic into day-to-day oncology clinics | Integrate sexual health into routine care<br>Normalise sexual health dialogues<br>Promote access to sexual health expert advice |

### 3.8.1 Patient-level interventions

Patient-level interventions are strategies to enhance the experience of sexual health care by oncology patients. Enhancing PCC ensures patients receive personalised care, including tailored sexual health support. Oncology clinics should have healthcare professionals who can communicate in the languages spoken by patients to improve access to PCC for patients from diverse backgrounds. Therefore, oncology clinics need to have multilingual capabilities to enhance PCC.

#### *3.8.1.1 Convey sexual health information in multiple languages*

Many survivors of cancer feel that receiving information and support related to sexual health is essential; however, they often do not receive such services in a manner that aligns with their cultural norms (Sporn et al., 2015). Providing sexual health information in the languages spoken by the patients can be helpful to address this issue. It is essential to make resources on sexual health available and accessible to patients and their family members (Park et al., 2009), which can be accomplished through brochures, hospital websites, workshops, workbooks, posters, and slide presentations. However, the availability of resources should not replace patients' face-to-face consultations with health care providers (Sporn et al., 2015; Walsh et al., 2010). Despite patients' desire to discuss their sexual health with their oncology health professionals, infrequent communication on this topic has been reported in the literature (Dai et al., 2020; Phahlamohlaka, 2017; Sporn et al., 2015. By improving access to information, patients may be more comfortable discussing issues related to sexuality and intimacy. A language barrier between healthcare professionals and patients can negatively affect the quality of care, reduce satisfaction for both parties and limit opportunities for PCC (Al Shamsi et al., 2020). Effective and consistent communication with patients is needed to improve the quality of care for cancer patients.

#### *3.8.1.2 Make spousal counselling a norm in oncology care*

Cancer and its treatment have a negative effect on a patient's sexual health, creating physical and psychological challenges that affect not only the patient but also their partners (Albers et al., 2021; Gilbert et al., 2016). Studies report that patients with cancer and their partners face challenges related to sex and intimacy that are caused by the impact of cancer on the patient's self-image, physical changes, treatment side effects (e.g., pain and fatigue) and the repositioning of patients as asexual beings (Gilbert et al., 2016; Hawkins et al., 2009).

Partners of patients with cancer often feel they do not receive enough support, advice or information related to sexuality and intimacy (Gilbert et al., 2010, 2016; Lehto et al., 2018). In the present study, interviews with patients who had been treated for prostate cancer and who had erectile dysfunction revealed that most men wished for their lives to return to normal after treatment, with an emphasis on sexual intimacy with their spouses (see Section 5.5.3). Couple counselling should be routine in oncology care, to provide accurate information and supportive care advice for partners. Albers et al., (2020) and Stewart et al., (2021) indicate that partners of patients with cancer prefer to receive routine care information about sexual health and intimacy from oncology health professionals and learn from the experiences of others.

### 3.8.2 Peer-support level

At the peer-support level, interventions are designed to provide emotional support to patients with cancer by bringing them in touch with others with similar experiences. Peer support can come from trained cancer survivor counsellors or a cancer support group.

#### *3.8.2.1 Involve cancer support groups in a cancer treatment plans*

Involving peer support counsellors and cancer support groups in cancer treatment plans is essential. These interventions provide patients with emotional support by connecting them with others who have had similar experiences. Support through cancer support groups can meet patients' information needs, including improving their knowledge and feeling of being informed, empowered and prepared (Bovbjerg et al., 2022). This support can be particularly beneficial for patients, because it reduces feelings of isolation and promotes a sense of hope and optimism. Peer support counselling is often provided by trained volunteers or professionals in hospitals, community centres, or online platforms (Bovbjerg et al., 2022). Peer support counselling enhances patients' emotional well-being and quality of life (Zhang et al., 2022).

Cancer survivors who are employed as peer counsellors offer patients hope for the future, as their personal experience with cancer enables them to empathise with the emotional challenges caused by a cancer diagnosis (Hoey et al., 2008; Zhang et al., 2022). Cancer support groups are based on shared personal experiences rather than giving professional support, which emphasises the importance of peers in patient care (American Cancer Society, 2024). Men with prostate cancer should be encouraged to actively participate in support groups, such as those offered by the Cancer Association of South Africa (CANSA), which support and counsel newly diagnosed patients. Oncology departments should leverage these groups for peer counselling, both within and outside the hospital setting, because shared patient experiences could help to address topics such as sexual health that patients might feel uncomfortable discussing openly with oncology health professionals in oncology clinics.

The work of cancer-survivor-led peer-support counsellors is often neglected in oncology care, instead of being seen as an intervention option for counselling patients. Peer-support counselling refers to the support provided to persons living with cancer by survivors of cancer or by oncology health professionals (Giese-Davis, Bliss-Isberg, Carson et al., 2006; Giese-Davis, Bliss-Isberg, Wittenberg et al., 2016). Peer-support counsellors are vital for providing emotional and practical support to individuals facing various challenges (Power & Hegarty, 2010). For example, in sexual health care, peer-support counsellors can provide invaluable assistance to patients who may feel uncomfortable discussing their concerns with oncology health professionals. In addition, a peer-counselling programme may improve satisfaction with medical care, relationships and social support, reduce isolation, increase knowledge and coping skills and improve mood (Bovbjerg et al., 2022; Giese-Davis, Bliss-Isberg, Wittenberg et al., 2016).

### 3.8.3 Provider level

Oncology health professionals should play a pivotal role in advocating for the provision of sexual health services for cancer patients. They should actively work to reduce the social stigma associated with sexual health, maintain proficient counselling skills and understand the scope of their practice in this area. Additionally, they should create a safe and non-judgemental environment for patients to openly discuss their sexual health issues (Banerjee et al., 2018; Savoy & O’Gurek, 2020).

#### *3.8.3.1 Create awareness to change the attitudes of health professionals*

To change the attitudes of oncology health professionals towards sexual health, creating awareness is essential (Rahmati et al., 2020; Verrastro et al., 2020). Unfortunately, many healthcare professionals still view discussions about sexuality and intimacy as taboo, shameful, or awkward, which makes it challenging to openly address sexual health issues (Blackburn et al., 2017), as shown in Table 3.1. As a result, some oncology health professionals may find it challenging to initiate sexual health conversations with their patients because of the stigma attached to sexual health. Thus, there is a need to destigmatise sexual health by creating an open and non-judgemental environment in which patients can discuss their sexual health concerns without feeling embarrassed. Awareness campaigns and education and training initiatives can help reduce stigma and improve sexual health care in oncology settings. Several authors describe factors that constitute barriers for oncology health professionals to engage with patients regarding sexual health (Bdair & ConsTantino, 2017; Krouwel et al., 2019; Walsh et al., 2010). Phahlamohlaka and Mdletshe (2022) classified barriers to sexual health communication, as captured in Table 3.3, which underscores the need to raise awareness of sexual health among oncology health professionals and patients in oncology clinical settings.

**Table 3.3: Barriers to sexual health communication (Phahlamohlaka & Mdletshe, 2022)**

| Common barriers to sexual health communication | Patient-specific | Provider-specific | System-specific |
|---|---|---|---|
| Fear of opening up a can of worms | * | * | |
| Afraid to offend or cause embarrassment | * | * | |
| Concerns about the reactions of patients or staff | * | * | |
| Mismatched expectations between patients and health professionals | * | | |
| Personal discomfort and lack of openness | * | | |

| Common barriers to sexual health communication | Patient-specific | Provider-specific | System-specific |
|---|---|---|---|
| Language barriers between patients and health professionals | * | | |
| Fear that patient may sexualise the consultation | | * | |
| Concern about own knowledge and abilities | * | * | |
| A patient or health care professional of the opposite gender | * | * | |
| Cultural or religious beliefs about sexuality | * | * | |
| Lack of time, resources, and access to training | | * | * |
| Lack of written information on sexual health | | | * |
| Lack of clear policy guidelines in the departments | | | * |
| Some health professionals feel it is someone else's task | | * | |
| Lack of communication among health professionals about the topic | | * | |
| Not given “permission” to raise the issue | * | * | |
| Assume it is not an important issue | | * | |
| Sexuality is a very personal topic | * | * | |
| Advanced age of the patient | | * | |
| The age difference between health professionals and patient | * | * | |
| The patient is not ready to discuss the topic | * | * | |
| Health professionals feel uncomfortable engaging in the subject | | * | |

Patient-specific barriers vary for each patient and arise from personal characteristics such as culture, religion, beliefs and specific challenges faced in oncology. These barriers can make it difficult for patients to openly discuss sexual health issues. Provider-specific barriers are related to oncology health professionals' personal characteristics, attitudes, communication styles, comfort levels and expertise in handling sexual health discussions, which could hinder effective communication with patients. System-specific barriers are deeply rooted in the healthcare system and encompass broader issues such as access to care, policies, resources and organisational culture, all of which influence the quality and availability of sexual health support (O'Connor et al., 2019; Park et al., 2009).

#### *3.8.3.2 Avail opportunities for in-service training workshops*

Oncology departments that wish to implement and enhance PCC for men with cancer may consider providing access to in-service training workshops on sexual health for oncology health professionals (Phahlamohlaka, 2017). Such opportunities could facilitate the effective development of knowledge and skills to address sexual health issues of cancer patients. In addition, through training in sexual health care, oncology health professionals can improve their ability to communicate with patients about these sensitive issues, provide appropriate resources and referrals, and offer compassionate care. In-service training workshops on sexual health care can also play a key role in reducing the stigma and discomfort associated with discussing sexual health issues (Ford et al., 2013; Kidd et al., 2015; MacLean, 2018). As a result, oncology health professionals may, because of their enhanced level of comfort, become more assured about discussing sexual health issues with patients, which can help patients feel more relaxed and inclined to seek assistance and guidance.

#### *3.8.3.3 Implement practice guidelines on sexual health care*

Improving the quality of cancer care involves implementing clear sexual health care practice guidelines in oncology facilities (Li et al., 2022). These guidelines should be based on current research and best practices and address the unique needs of oncology patients. They should equip oncology health professionals with comprehensive information on creating an enabling and non-judgemental environment for screening sexual health problems. Practical guidelines are essential for consistent, high-quality care at all oncology facilities (Phahlamohlaka, 2017). Clearly defined roles will enhance oncology health professionals' confidence and focus when they address sexual health issues with patients.

### 3.8.4 System level

System-level interventions aim to address the challenges faced by patients and oncology health professionals at a broader level to transform sexual health care practices in oncology departments. To strengthen the provision of SCMSH in oncology through a review of policies and the scope of practice for oncology health professionals by the relevant authorities.

#### *3.8.4.1 Empower oncology health professionals with relevant resources*

Several studies document the challenges that hinder the routine inclusion of sexual health care in oncology settings for patients with cancer (see Table 3.3) (Krouwel et al., 2019; Park et al., 2009; Reese et al., 2017). Consequently, targeted interventions need to be designed to tackle the most common barriers to sexual health counselling in oncology facilities. Furthermore, the management of oncology facilities should empower oncology health professionals with relevant resources so that they can acquire competencies and skills to improve SCMSH. To advance sexual health care in oncology, managers should prioritise healthcare providers' professional development and training. For example, enrolling oncology health professionals in a short sexual health counselling course could improve their knowledge and ability to facilitate dialogue about sexual health (Phahlamohlaka & Mdletshe, 2022; Verrastro et al., 2020).

#### *3.8.4.2 Integrate sexual health education in oncology curricula*

As the literature highlights, health-related courses often do not provide adequate sexual health care education and training (Albers et al., 2020; Beebe et al., 2021). Additionally, nursing education and training programmes are often lacking in terms of sexual health education (Eid et al., 2020; Hardin, 2007). Consequently, health care providers, including RTTs, may not be adequately equipped to support cancer patients with sexual health issues. Integrating sexual health education and training into the curriculum can help trainees develop the knowledge and skills necessary to address sexual health concerns and to provide appropriate services.

#### *3.8.4.3 Integrate men’s health clinic in oncology departments*

There is a need to introduce multidisciplinary oncology sexual health clinics to address gaps in sexual health care for patients receiving cancer treatment (Phahlamohlaka & Mdletshe, 2022; Tracy et al., 2016). Thus, incorporating a sexual health clinic into oncology services is expected to enhance sexual health support services and promote whole-person care in cancer treatment. This strategy may also expedite diagnosing and treating other cancer types specific to men and address other medical conditions that may influence their care and general health status. Moreover, it could create a centralised system of care that enables patients to easily access information that could support them with their diagnoses, including all possible reproductive, psychological and sexual health implications, in one place, which would reduce travel costs.

## 3.9 INVOLVEMENT OF RADIATION THERAPISTS IN SEXUAL HEALTH COUNSELLING

Sexual counselling is not consistently integrated into oncology care and, when it is offered, healthcare professionals often view it as failing to meet optimal standards (Bingham et al., 2024; Oskay et al., 2014). Medical oncologists acknowledge that counselling on sexual function is part of their role but do not often routinely counsel patients on this aspect (Krouwel et al., 2019). In clinical settings, there is uncertainty among oncology health professionals regarding who should address patients’ concerns about the sexual side effects of cancer treatment (Bingham et al., 2024; Phahlamohlaka & Mdletshe, 2022). Nevertheless, patients with cancer identify sexual issues as being of equal importance to other quality-of-life issues (Oskay et al., 2014).

There is little though convincing literature on the role of RTTs in providing supportive care for patients who experience sexual health challenges during radiotherapy (Martino & Odle, 2007; Nisbet et al., 2021; Oliveira et al., 2022; Turner & Prospero, 2015). Although the role of RTTs primarily involves operating medical equipment to localise tumours, generating and evaluating treatment plans and accurately delivering radiotherapy (Department of Health, 2016), they are also expected to inform patients about treatment instructions and information about radiation side effects and provide patient counselling related to radiotherapy (Halkett & O’Connor, 2015; Lawrence, 2012). Since RTTs spend a great deal of time with their patients during treatment

(Elsner et al., 2018), it is quite feasible to regularly discuss sexual health during therapy sessions. From my clinical experience, RTTs have a role to play in contributing to the provision of SCMSH. Additionally, RTTs face challenges in oncology settings in deciding whether to refer patients with sexual health questions to radiation oncologists or handle them themselves. The role of RTTs in facilitating sexual health counselling in routine care is underdeveloped, and this highlights the need for additional research in this area.

## 3.10 MODIFIED 5 A'S BEHAVIOURAL CHANGE FRAMEWORK TO FACILITATE SEXUAL HEALTH DIALOGUE

The 5 A's behavioural change framework has been trusted for public health issues such as obesity, smoking and sexual problems (Park et al., 2009; Sturgiss & van Weel, 2017; Vallis et al., 2013). In Australia, this framework is used in general practice to prevent issues related to smoking, diet, alcohol, and physical activity (Tobacco Use and Dependence Guideline Panel, 2008). This framework, when it is connected to this study's conceptual framework (see Figure 2.1) and behavioural change theories (Glasgow, 2006; Vallis et al., 2013), aligns with the BCW and its COM-B model, which focuses on facilitating oncology health professionals' behavioural change regarding SCMSH in prostate cancer patients. A modified 5 A's framework was developed from this literature review to assist oncology health professionals in facilitating sexual health discussions with patients. This user-friendly framework, which was designed for oncology nurses, RTTs and physicians, is easy to implement without extensive training and boosts oncology health professionals' confidence (McCaughan et al., 2020). Figure 3.1 shows a simplified version of the 5 A's framework.

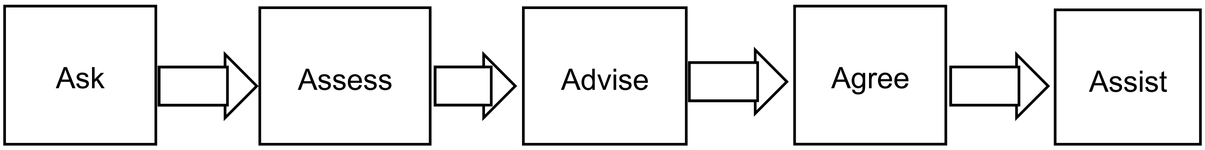

**Figure 3.1: A flowchart of the 5 A's behavioural change framework (Sturgiss & Van Weel, 2017)**

Table 3.4 describes the meanings and motivations of the 5 A's of the 5 A's behavioural change framework – Ask, Assess, Advise, Agree, and Assist – to provide context regarding sexual health.

**Table 3.4: Modified 5 A's behaviour change framework (Karimi et al., 2021; Vallis et al., 2013; Park et al., 2009; Sturgiss & van Weel, 2017)**

| 5 A's | Meanings | Motivations |
|---|---|---|
| **Ask** | • Ask permission to bring up the topic<br>• Explore patient's readiness to change<br>• Be non-judgemental | • Sexual health is a sensitive issue<br>• Readiness could predict outcomes<br>• Avoid verbal cues that imply judgement |
| **Assess** | • Assess patient behaviour, beliefs and motivation<br>• Screen history of sexual dysfunction<br>• Bring the patient's social life into the assessment | • Consider individual priorities and beliefs<br>• Some underlying medical comorbidities induce sexual dysfunction<br>• Additional factors related to the problem may be uncovered |
| **Advise** | • Remind the patient that it is okay to ask questions about sexual health<br>• Educate the patient about treatment-related sexual health effects<br>• Advise patient on possible interventions | • Normalise sexual health dialogue<br>• Keep patients informed of what to expect<br>• Reassure the patient about treatment options |
| **Agree** | • Set SMART goals or nothing<br>• Agree on a specific intervention or doing nothing | • Sometimes, patients may have unrealistic expectations<br>• Do not assume that every patient needs help |
| **Assist** | • Provide patient-specific and relevant help<br>• Assist the patient in accessing relevant services<br>• Assist in arranging a follow-up visit | • Clarify misinformation<br>• Patients may be shy to seek professional help on their own<br>• If necessary, arrange a follow-up visit to review the intervention |

*Note.* SMART means specific, measurable, achievable, realistic and time-bound.

A graphical depiction of the modified 5 A's behaviour change framework is shown in Figure 3.2, and a detailed description is given in Table 3.4. This framework was modified to help oncology health professionals bring about sexual health conversations with patients during radiotherapy for cancer in oncology settings. It was originally derived from Sturgiss and van Weel's (2017) framework for managing obesity.

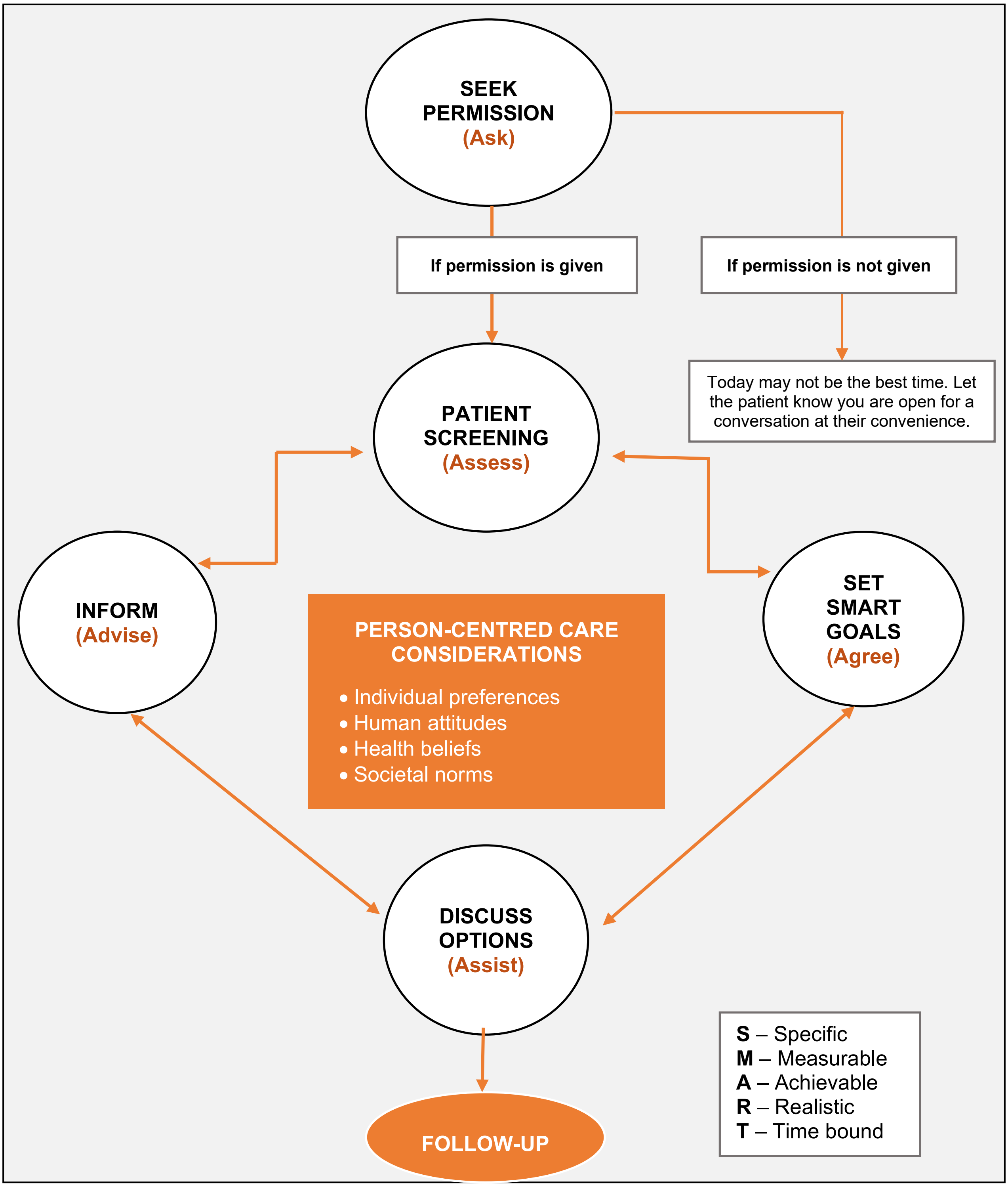

**Figure 3.2: A modified 5 A's behaviour change framework to aid sexual health dialogues (adapted from Sturgiss and van Weel [2017])**

In Figure 3.2, PCC is at the heart of a modified 5 A's behavioural change framework, which underscores the importance of this type of care for improving a person's sense of health and considering their individual preferences, human attitudes, beliefs and customs, and societal norms (Kelsall-Knight, 2022; Stewart et al., 2000). Person centred care involves supporting patients and focusing on their personal needs rather than just curing the illness (Coulter & Oldham, 2016). This approach considers the person’s health beliefs, cultural values and lived experiences as an integral part of the care provided (Kanagasingam et al., 2023; Mezzich et al., 2010;). The modified 5 A’s behavioural change framework calls for sexual health counsellors to set SMART (specific, measurable, achievable, realistic and time-bound) targets when they design interventions to address sensitive patient health issues.

## 3.11 SUMMARY

This chapter examined the literature on the phenomenon under study. It articulated a knowledge gap related to SCMSH in oncology patients receiving radiotherapy for prostate cancer. Existing models of sexual health care were explored to establish a foundation for this study. This chapter also scrutinised interventions aimed at enhancing SCMSH in oncology settings. The modified 5 A’s behavioural change framework graphically depicts a process of approaching patients to initiate a sexual health dialogue with them while considering their preferences, attitudes, health beliefs and societal norms in the context of cancer care. Chapter 4 will detail the research methods and designs employed in this study.

# CHAPTER 4

# RESEARCH METHODS AND DESIGN

> *There is a light at the end of every tunnel.*
> *Some tunnels happen to be longer than others.*
>
> Ada Adams

## 4.1 INTRODUCTION

The previous chapter presented a targeted literature review on supportive care for sexual health and ways to address sexual health issues of male patients in oncology settings. This chapter will discuss the mixed methods research methodology that this study used to explore and investigate, from multiple perspectives, the phenomenon of sexual health in men with prostate cancer. The extended research onion framework will be explained to provide a compelling rationale for its use in this study. In addition, my ontological, epistemological and methodological positions will be presented, and insight into the underlying research philosophy will be provided. Finally, this chapter will describe measures taken to ensure the trustworthiness, validity and reliability of this research study.

## 4.2 METHODOLOGICAL FRAMEWORK

The extended research onion framework (see Figure 4.1) underlies the exploratory sequential mixed methods design and guided the selection of research methods to explore the research problem of this study. It builds on the original research onion of Saunders et al., (2019). Therefore, this framework was developed to describe an exploratory sequential mixed methodology specific to this study. The key elements of the extended research onion are the research philosophy, paradigmatic perspective, theoretical reasoning, methodological choice, research strategy, time horizon, ethics considerations, data collection, data analysis and research rigour.

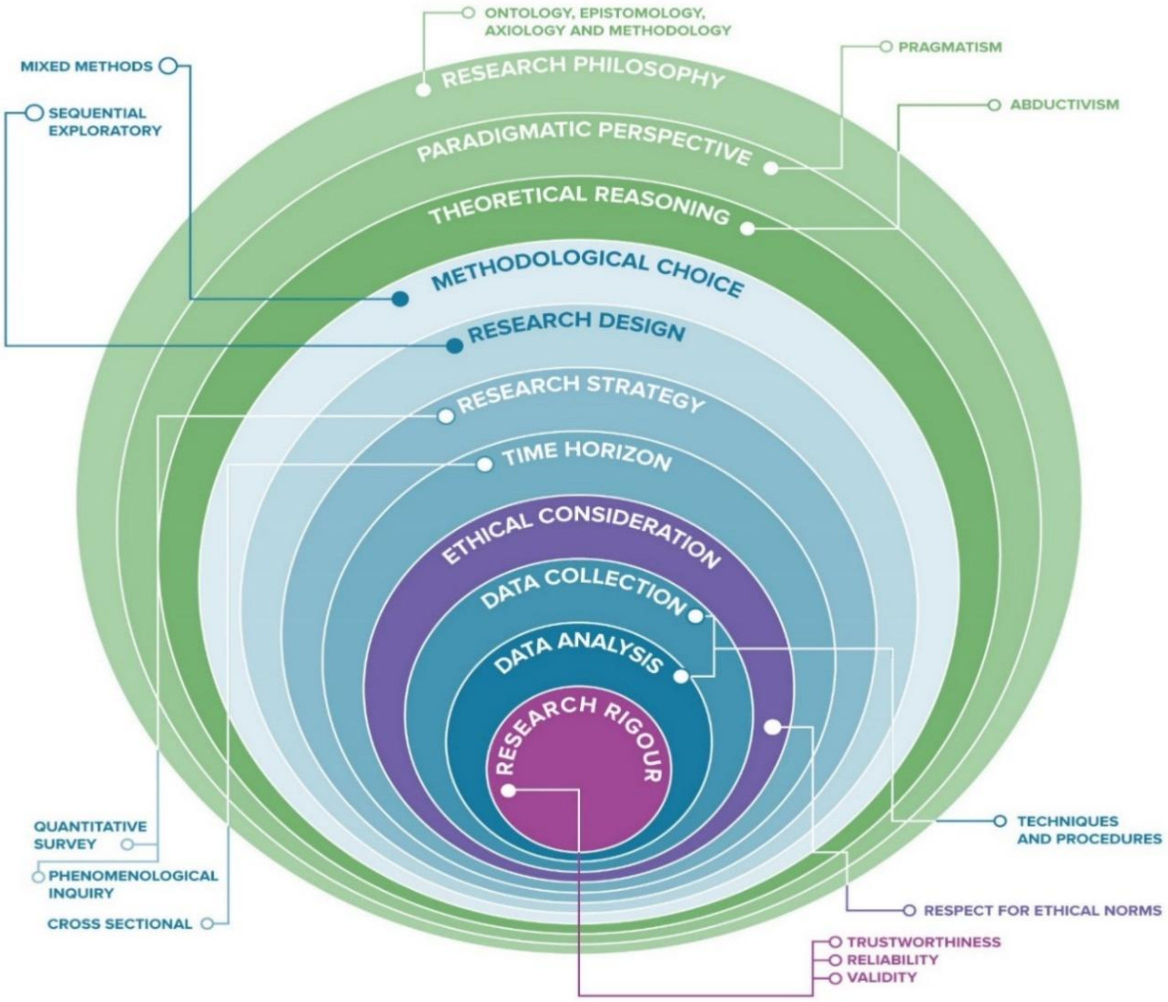

**Figure 4.1: Extended research onion framework (Adapted from Saunders et al., [2019])**

## 4.3 RESEARCH PHILOSOPHY

A well-thought-out and consistent set of assumptions constitute a credible research philosophy and underpins a study’s methodological choice, research strategy, data collection techniques and analysis procedures. Philosophical assumptions play a significant role in shaping the researcher’s understanding of research questions, the methods employed and the interpretation of research findings (Crotty, 2020). Positivism, interpretivism and pragmatism are widely used research paradigms (Creswell, 2014; Saunders et al., 2019). At the heart of every philosophical position are philosophical concepts, namely, ontological, epistemological, axiological, and methodological assumptions. The term paradigm refers to philosophical assumptions that define the researcher’s worldview (Lincoln et al., 2011). A researcher’s philosophical position in support of their choice of pragmatist paradigm is explained below with reference to the following philosophical assumptions:

### 4.3.1 Ontological assumptions

Ontology refers to beliefs or assumptions about reality, its existence and what is known about it (Guba & Lincoln, 1989; Richards, 2003). Thus, ontological assumptions prompt researchers to question the present reality. For example, a study conducted by Phahlamohlaka et al., (2018) demonstrates that sexual health experiences of patients with prostate cancer during and after radiotherapy (radiotherapy) vary from patient to patient. The current study assumes that RTTs’ perceptions of the inclusion of sexual health in routine care may differ, depending on the knowledge, education, personal factors and cultures of RTTs. These ontological assumptions guided the conceptualisation of this study.

### 4.3.2 Epistemological assumptions

Epistemology concerns how knowledge is acquired, developed and communicated (Cohen et al., 2007) and addresses what knowledge is and how we can be certain of it (Al-Ababneh, 2020; Onwuegbuzie & Combs, 2010). Pragmatic epistemology does not view knowledge as a fixed reality (Rorty, 1980) but acknowledges that multiple realities can be empirically explored (Creswell & Plano Clark, 2011). This epistemological perspective debates objectivity, subjectivity, causality, validity and generalisability (Patton, 2002). To gain an understanding of the phenomenon, I collected and analysed qualitative and quantitative data provided by patients who had been treated for prostate cancer and RTTs, respectively. Pragmatists assert that no two individuals have identical experiences, which means that every person has a unique worldview (Kaushik & Walsh, 2019).

### 4.3.3 Axiological assumptions

Axiology deals with the ethical issues and values to consider when designing a research study (Kivunja and Kuyini, 2017; Saunders et al., 2019). For instance, during patient interviews, I respected each patient’s values, beliefs, religion and culture while I was exploring their sexual health issues. A clear stance on research ethics, or axiological awareness, guided me in making appropriate, ethical decisions and judgements. Additionally, the following questions were considered to reflect on the study's axiological assumptions:

- What values will I live by or be guided by as I conduct this research?
- What should be done to respect the rights of all the participants?
- What moral issues and characteristics need to be considered?
- Which cultural, religious, or moral issues arise, and how will I address them?
- How should I conduct research socially, respectfully and peacefully?
- How should I avoid or minimise risk or harm, whether physical, psychological, social, economic or other?

The answers to the above questions guided me to conduct the research ethically without bias. In addition, they showed an understanding that all humans have dignity, which must be respected, and a fundamental human right to make choices, which I must respect. Refer to section 4.10 for the ethical considerations undertaken in this study.

### 4.3.4 Methodological assumptions

Methodology is the shared understanding of the best means to gain knowledge about a phenomenon (Creswell, 2009; Lincoln et al., 2011). Crotty (2020) defines methodology as the strategy, action plan, process or design that guides the selection of research methods. It links to thoughts on how knowledge is acquired through systematic methods. Recognising that every research method has inherent limitations, a mixed methods approach was adopted to explore supportive care for sexual health with patients receiving radiotherapy for prostate cancer and RTTs' perspectives on facilitating such support. This approach was chosen to balance the weaknesses of relying on a single method, particularly when investigating a sensitive topic like sexual health.

## 4.4 PARADIGMATIC PERSPECTIVES

Pragmatism is anchored in the view that knowledge and reality are based on socially constructed beliefs and habits (Kaushik & Walsh, 2019; Maarouf, 2019; Saunders et al., 2019). Pragmatists believe in the freedom to conduct research without design limitations, and they promote pragmatism as a research paradigm by linking it to mixed methods research (Creswell, 2014; Kaushik & Walsh, 2019; Morgan, 2014). A pragmatic approach fits in well with the aim of this study and it enabled me to collect evidence from a range of sources and critically evaluate it in terms of its strengths, limitations and applicability to practice (Plath, 2013). Sexual health care is a multifaceted concept with many realities; therefore, the design of this study falls well within pragmatism. Pragmatics combines positivist and interpretivist positions in a single study by taking into account the nature of the research question. Positivists argue that objective knowledge is acquired by examining empirical evidence and doing hypothesis testing, whereas interpretivists believe in multiple socially constructed realities (Goles & Hirschheim, 2000). With interpretivism, the researcher adopts an empathetic attitude to understand the social world of research participants from a global perspective (Tashakkori & Teddlie, 2010).

## 4.5 THEORETICAL REASONING

Pragmatists view knowledge acquisition as being on a continuum instead of categorising it into distinct ontological and epistemological viewpoints represented by postpositivism and interpretivism (Goles & Hirschheim, 2000; Morgan, 2014). Pragmatism rejects the traditional philosophical dualism of objectivity and subjectivity (Biesta, 2010). This approach allows researchers to abandon the forced dichotomies of positivism and interpretivism (Creswell & Plano Clark, 2011). Postpositivists adopt quantitative research methods and deductive reasoning logic using numerical data collected to test theories. In contrast, interpretivists emphasise qualitative approaches and inductive reasoning with narrative data collected to develop theories (Sim & Wright, 2000) or to understand particular phenomena.

Sexuality is a multifaceted subject matter, so I did not believe that deductive or inductive reasoning alone would suffice for this study. Therefore, abductive reasoning, as the most appropriate reasoning approach, was adopted. Pragmatism is usually associated with abductive reasoning, which oscillates between deductive and inductive reasoning (Kaushik & Walsh, 2019), instead of moving exclusively from theory to data (as in deduction) or from data to theory (as in induction) (Saunders et al., 2019). The qualitative Phase 1 involved inductive reasoning, and the quantitative

Phase 2 employed deductive reasoning. Thereafter, I triangulated the two research methods using abductive reasoning to build a model to facilitate SCMSH.

## 4.6 METHODOLOGICAL CHOICE

The mixed methods approach refers to the concurrent or sequential use of multiple approaches at the research method level (Creswell & Plano Clark, 2011; Creswell & Plano Clark, 2018; Fouché et al., 2022; Maarouf, 2019). Mixed methods studies are preferred when neither qualitative nor quantitative studies on their own are expected to provide adequate results (Sadan, 2014; Saunders et al., 2009, 2019). Furthermore, this type of mixed methods study made it possible to triangulate the two research approaches to study the phenomenon under study.

Methodological triangulation comprises (1) within-method triangulation and (2) between or across-method triangulation. In the within-method approach, at least two data collection strategies, for instance, two qualitative or two quantitative methods in the same paradigm, are used to study the same phenomenon. The across-method approach uses both qualitative and quantitative strategies to study the same phenomenon (Kimchi et al., 1991; Nolan & Behi, 1995; Thurmond, 2001; Turner et al., 2017). In this study, I employed across-method triangulation by combining and analysing the findings of Phases 1 and 2. Section 4.12.1.1 b) demonstrates how within-method triangulation was used when analysing interview transcripts in Phase 1 to maintain trustworthiness in this mixed methods study.

### 4.6.1 Exploratory sequential mixed methods design

This exploratory sequential mixed methods design involved a two-phase data collection process. In Phase 1, qualitative data were collected and thematically analysed. The findings were then used to develop a survey instrument for collecting quantitative data in Phase 2 (Creswell, 2014; Creswell & Plano Clark, 2018; Fouché et al., 2022). The mixed methods notation for this study is QUAL → quan, where "QUAL" indicates the dominant qualitative method, and "quan" denotes the less-dominant quantitative method (Guest et al., 2012). These abbreviations are used consistently throughout the thesis to represent the weight of qualitative and quantitative findings.

In this study, qualitative research (Phase 1) was the dominant method, because its findings played a key role in developing the survey instrument used in Phase 2. This survey collected the perspectives of RTTs on facilitating supportive sexual health care for patients receiving radiotherapy for prostate cancer. Therefore, the data collection sequence involved Phase 1 with male patients, followed by Phase 2 with RTTs.

Figure 4.2 graphically depicts a sequential methodical conceptual framework of the research methodology and illustrates the four main research phases of the current study, which generated empirical findings and eventually led to the development of a model to aid the facilitation of SCMSH in oncology settings. In summary, Phases 1 and 2 involved collecting and analysing data through qualitative face-to-face patient interviews and a survey questionnaire with RTTs (see Chapters 5 and 6), respectively. The next step was the presentation and discussion of the integrated findings of Phases 1 and 2 (see Chapter 7). In Phase 3, a model to facilitate SCMSH was developed using the key concepts extracted from the integrated findings (see Chapters 8 and 9). In Phase 4, eight experts with relevant professional backgrounds were invited to a panel meeting to evaluate the model's clarity, simplicity, consistency and reliability (see Chapter 9, Section 9.4).

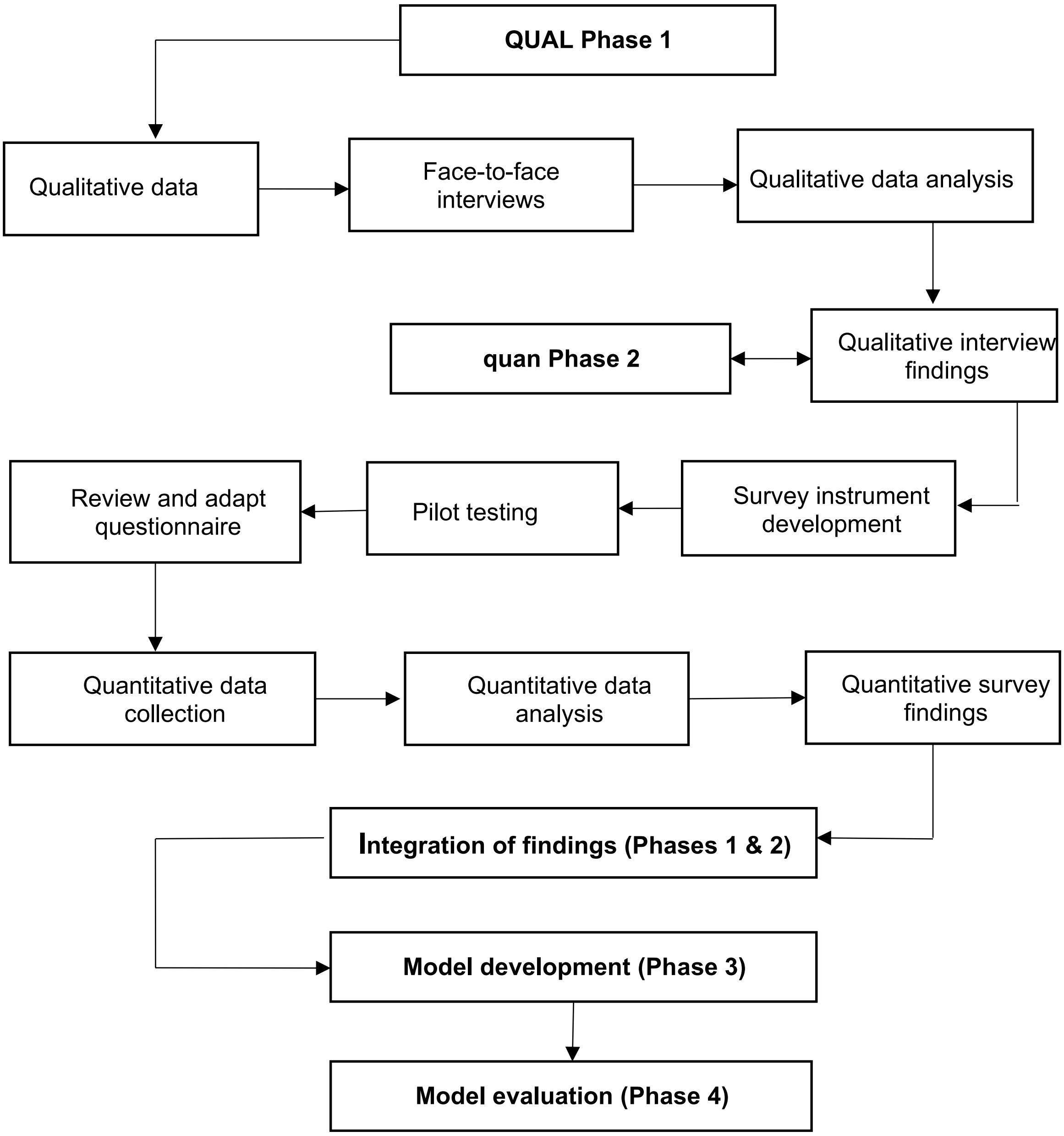

**Figure 4.2: The four main research phases specific to the current study**

## 4.7 RESEARCH STRATEGY

The research strategies adopted by this study were interpretive phenomenological analysis (IPA) and surveys. The IPA was adopted as a unique methodology to explore and interpret the sexual experiences of men who had been treated for prostate cancer (Frechette et al., 2020; Smith & Osborn, 2015). This strategy was used in qualitative Phase 1 to explore the experiences of male patients receiving sexual health support from oncology health professionals during radiotherapy for prostate cancer. In turn, quantitative research is mainly associated with experimental research and survey strategies (Creswell, 2012). As a result, Phase 2 used a quantitative survey to examine RTTs' perspectives regarding their involvement in facilitating men's sexual health in patients treated for prostate cancer.

## 4.8 TIME HORIZON

This exploratory sequential mixed method study employed a cross-sectional survey as a time horizon; sequential data collection was conducted at specific time points. Saunders et al., (2016) describe a cross-sectional survey as being carried out at a particular time, instead of over a period, to identify a trend in either change or development. The data collection period started on 1 September 2021 and ended on 30 November 2021.

## 4.9 RESEARCH TECHNIQUES AND PROCEDURES

The techniques and procedures cover several considerations associated with conducting research, such as the study location and the data collection strategy needed to obtain information or data from the participants.

### 4.9.1 Research sites

Two hospitals (Hospitals A and B) were designated as research sites for the two phases of this study. However, I chose to conduct Phase 1 at Hospital A because it was a larger hospital with a diverse population representative of residents of Gauteng province.

### 4.9.2 Research instruments

#### *4.9.2.1 Face-to-face unstructured interviews in qualitative Phase 1*

Qualitative studies typically employ interviews, diaries, journals, observations and engagements, and open-ended questionnaires to obtain, analyse and interpret the data of visual and textual materials and oral history for data collection (Zohrabi, 2013). In the qualitative Phase 1 of the study, face-to-face, unstructured interviews (see Annexure 8) were conducted with patients to explore their experiences of living with erectile dysfunction and the SCMSH they received in oncology settings during radiotherapy for prostate cancer.

#### *4.9.2.2 Questionnaire in quantitative Phase 2*

Four themes and seven subthemes emerged from the analysis of qualitative interview data from Phase 1 and informed and guided the development of a self-administered questionnaire for surveying RTTs (Onwuegbuzie & Combs, 2010; Tashakkori & Teddlie, 2010). This questionnaire (see Annexure 9) surveyed perspectives of RTTs on their role to facilitate the male sexual health of patients receiving radiotherapy for prostate cancer. The survey provided a numeric description of trends, attitudes and opinions (Creswell, 2014) through nominal and ordinal scales with Likert scales to measure agreement levels (Della Porta & Keating, 2008). Constructs tested include sexual health counselling, RTTs' attitudes towards sexual health topics and role extension of RTTs to include sexual health counselling. In developing the research questionnaire, I considered several demographic variables: gender, age, race group, home language, employment position, work experience, highest qualification obtained and the university where the respondents completed their undergraduate studies in radiation therapy. Based on my knowledge and research experience in this field, I assumed that these demographic variables would contribute to understanding the sexual health phenomenon being studied. The questionnaire was divided into four sections:

**Section A: Biographical data:** The first part of the questionnaire collected demographic information about the respondents, such as age, gender, ethnicity, highest qualification and job position.

**Section B: Sexual health counselling:** This section was tailored to explore how RTTs dealt with sexual health queries from male patients. It was also designed to explore the status of sexual health inclusion in radiation therapy education and training curricula.

**Section C: Attitudes of radiation therapists towards sexual health counselling:** The section before the last part of the questionnaire was intended to solicit information about the perspectives of RTTs on facilitating SCMSH.

**Section D: Professional development:** In the last part of the questionnaire, data were sought to clarify the role of RTTs in promoting sexual health in male patients and RTTs' views on the support they needed if they were to improve the sexual health of male patients with prostate cancer.

### 4.9.3 Target population, participant selection and sampling

A target population comprises individuals with desired and relevant attributes for the research study (Creswell, 2003; Willie & Willie, 2023). The target population for Phase 1 was patients who had completed radiotherapy for prostate cancer at least six months before data collection. The primary research site sees approximately 480 referred prostate cancer patients annually in the radiation oncology department. Purposive sampling was adopted to draw a sample with similar characteristics from the target population of patients who had been treated for prostate cancer in qualitative Phase 1 (Banerjee & Chaudhury, 2010; Etikan et al., 2016). The initial target sample size for interviews in Phase 1 was 15 participants (n = 15). However, the final sample size was 12 participants because data saturation was reached after 12 interviews had been conducted. The inclusion and exclusion criteria that guided the selection of participants in Phase 1 are presented in Table 4.1.

**Table 4.1: Inclusion and exclusion criteria for qualitative Phase 1**

| Inclusion criteria |
|---|
| Patients treated for prostate cancer aged between 55 and 85 years |
| Patients who had received radiotherapy alone or combined with hormonal therapy or surgery |
| Patients who had completed radical radiotherapy prescription for prostate cancer treatment, e.g., 45 Gy |
| Patients who had completed radical radiotherapy for prostate cancer more than six months ago |
| **Exclusion criteria** |
| Patients treated for prostate cancer with radiotherapy aged older than 85 years |
| Patients who were mentally unfit to comprehend information |
| Patients treated for prostate cancer with palliative radiotherapy prescription, e.g., 30 Gy |

Table 4.2 presents inclusion and exclusion criteria for recruitment and selection of participants in the quantitative Phase 2.

**Table 4.2: Inclusion and exclusion criteria for quantitative Phase 2**

| Inclusion criteria |
|---|
| RTTs with a minimum of one year of post-community service experience |
| **Exclusion criteria** |
| RTTs who chose not to participate or consent |
| University lecturers |
| RTTs' trainees |

For Phase 2, purposive and convenience sampling techniques were chosen to select participants based on their knowledge about the phenomenon of interest, as well as their availability, accessibility and willingness to participate (Banerjee & Chaudhury, 2010; Etikan et al., 2016). The target population for Phase 2 was 10 male and 29 female RTTs (N = 39) at the primary site and 2 male and 19 female RTTs (N = 21) at the secondary site. The total target population for Phase 2 was 60 RTTs. The sample size for a population of 60 was calculated to be 50. The sample size was calculated using finite population correction for proportions (Cochran 1977; Israel, 1992):

**Step 1:** Calculation of sample size ($n_0$) using Cochran's formula

$$n_0 = \frac{Z^2 p(1-p)}{(e)^2}$$

$n_0$ = initial sample size

*e* = margin of error (0.06)

*p* = the fraction of the population (*p* = .5 for maximum variability)

Z = z-score corresponding to the desired confidence level (for α = 0.05, Z is 1.96)

$$n_0 = \frac{(1.92)^2(0.50(1-0.5)}{(0.06)^2}$$

$n_0 = 267$

**Step 2:** Cochran's modified formula for finite populations

$$\mathrm{n} = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

Where

n = adjusted sample size, $n_0$ = 267, N (Population) = 60

n = 267 / (1 + (267−1) / 60)

n ≈ 50, Therefore, the adjusted sample size is 50.

### 4.9.4 Data collection procedure

#### *4.9.4.1 Data collection in qualitative Phase 1*

In qualitative Phase 1, 15 male patients were recruited during their follow-up appointments at the oncology clinic. Patient information was recorded in an Excel spreadsheet to manage interview bookings. For those unavailable on the same day, interviews were scheduled at a convenient time and location. To ensure comfort, each interview started with an icebreaker and was conducted in a language that both the patient and I were comfortable with, thereby eliminating the need for an interpreter. I am proficient in Sepedi, Sesotho, Setswana, isiZulu and English. Interviews lasted 30−45 minutes and were audio-recorded, transcribed and translated into English. I also took field notes to capture non-verbal communication and contextualise patient experiences in the qualitative analysis.

Data saturation occurs when respondents start expressing the same thoughts about a specific phenomenon and when the assigned codes become saturated (Saunders et al., 2018). Choosing an appropriate purposive sample that meets the study selection criteria assists researchers to achieve data saturation in qualitative studies (Fusch & Ness, 2015). Upon completing the tenth interview, the audio recordings and transcripts started to show a discernible recurrence of thoughts among the patients, suggesting data saturation. I utilised code saturation to identify the point where no new concerns emerged. Additionally, I implemented meaning saturation to capture the stage where no further dimensions, nuances or insights regarding the phenomenon under study were discernible (Vasileiou et al., 2018). In this study, data saturation was achieved after 12 individual interviews.

#### *4.9.4.2 Data collection in quantitative Phase 2*

Self-administered, paper-based questionnaires were distributed to 50 RTTs at the two research sites during the quantitative phase. The questionnaires were completed without the researcher being present, thus allowing autonomous completion of the surveys. Upon completion, the RTTs placed completed questionnaires inside a sealed drop box with a slit opening on top of the box at each research site. I appointed a senior radiation therapist to oversee the data collection process at each research site. Drop boxes were placed at each research site for 30 days for data collection.

#### *4.9.4.3 Pilot test studies*

The pilot study is a key phase to identify potential issues in the research instruments and protocols before the full study is conducted (Kraemer et al., 2006). I conducted the first two interviews of Phase 1 of this study as pilot tests to assess the questionnaire's face validity and content validity, testing that the questions aligned with research objectives. The pilot study helped me to evaluate the practicality of the study design in a real-world setting and to identify potential challenges, such as background noise that could interfere with the accurate transcription of the interview data. To test the reliability and validity of the survey questions, which were informed by Phase 1 findings, I administered the questionnaire to five RTTs at one research site (Hospital A). I made no significant changes to the interview guide or survey instrument after the pilot studies for Phase 1 and Phase 2. As a result, the data collected during the pilot studies was included in the main study.

## 4.10 ETHICS CONSIDERATIONS

The researcher upheld principles of autonomy, non-maleficence, beneficence and justice in research throughout the study (Dhai & MacQuoid-Mason, 2011). Ethics clearance was obtained from Cape Peninsula University of Technology (CPUT/HW-REC 2020/H15; see Annexure 1) and the University of Witwatersrand (M2011123; see Annexure 2). Gatekeeper permission was obtained from the heads of radiation oncology departments at the participating public hospitals (see Annexures 3, 4 and 5). An information sheet (see Annexure 6) about the study was provided to all participants, and written informed consent was obtained from patients before they were interviewed (see Annexure 7). Radiation therapists voluntarily consented to participate in the survey, and the questionnaire did not require any personal identifying information to be provided. This study adhered to ethics guidelines and was registered with the National Health Research Database of South Africa under Gauteng province [**GP_202011_082**].

### 4.10.1 Principle of respect for autonomy

The first moral principle reflects the ethical norm of respecting the decision-making capacity of autonomous individuals (Hannawa, 2012). To respect this principle, I recognised the participants' capacities and perspectives, including a patient's right to hold particular views, to make confident choices and adhere to a specific moral justification (Hammersley & Traianou, 2012). I also considered the physical, mental, social, spiritual and religious aspects of the participants while conducting discussions.

### 4.10.2 Right to dignity and privacy

Participants' information was kept confidential throughout the study. I stored voice recordings of interviews safely on a password-protected laptop. The independent transcriber was asked to sign a confidentiality agreement and to agree to the terms and conditions to keep patient information confidential. In the findings, patients were coded for anonymity. Therefore, RTTs did not need to write or share personally identifiable information in the questionnaire. According to Polit and Beck (2012), the researcher must protect the dignity and respect of all participants regardless of their participation in the study. The participating hospitals in this study were coded as Hospitals A and B to protect their identities and reputations.

### 4.10.3 Principle of non-maleficence

The principle of non-maleficence – a cornerstone of ethical research – was upheld to protect patients from harm. Although none of the participants required a clinical psychologist, a referral plan was in place for those who might have experienced distress after interviews. Financial exploitation was prevented, and participants were informed there would be no direct economic benefit for participating in the study. However, I covered the travel expenses for participants who required financial assistance for transportation.

### 4.10.4 Principle of beneficence

Beneficence refers to doing good and actively promoting goodness, kindness and charity (Taylor, 2013). This norm entails actions such as preventing evil or harm, removing evil or harm, and doing or promoting good (Hannawa, 2012). Thus, beneficent acts require providers to balance benefits against risks and costs (Hannawa, 2012). This study was conducted to do good and promote male sexual health facilitation for patients with prostate cancer.

### 4.10.5 Right to voluntary participation and informed consent

The right to voluntary participation and informed consent was fundamental to this study. The patients were assured of their freedom to participate without fear of reprisal, and they could withdraw from the study at any time. Informed consent was obtained before personal patient data were obtained through interviews. Importantly, the patients were allowed to ask questions to ensure their complete understanding of the study and what they consented to respecting their autonomy.

### 4.10.6 Principle of justice

This ethics principle reflects the moral obligation of just, fair and equitable treatment without prejudice (Raus et al., 2018). I applied the following six substantive justice principles from Beauchamp and Childress (2013) to respect this principle: (1) an equal share for everyone; (2) distribution as needed; (3) distribution based on effort; (4) distribution by contribution; (5) distribution based on merit; and (6) distribution according to open market exchanges. This principle respects the fair distribution of scarce resources, respects people's competing needs, rights and obligations, and respects morally acceptable laws (Hannawa, 2012). Distributive justice was maintained by ensuring that all persons in the population were subject to the same inclusion criteria to participate in the study. Research participants who expressed no interest in participating were not subjected to any unfavourable or unjust treatment.

## 4.11 DATA ANALYSES

### 4.11.1 Data analysis in qualitative Phase 1

A qualitative researcher acts as a storyteller by presenting participants’ perspectives using their verbatim words (Creswell, 2007). Since there is no universal approach to analysing qualitative data (Saunders et al., 2018), this study employed narrative analysis to explore “how” male patients shared their experiences in their own words (Alase, 2017; Grad Coach, 2021) and translating their stories into meaningful scientific data. Additionally, interpretive analysis was used to uncover the deeper meanings behind participants’ experiences by addressing “what” they sought to understand about care for sexual health issues (Research Tube, 2022; Smith & Osborn, 2015). The six-step reflexive thematic analysis guided the development of codes and themes further. Reflexivity emphasises the researcher’s role in the process and manages subjectivity to ensure objective conclusions (Olmos-Vega et al., 2023; Patnaik, 2013).

Reflexive thematic analysis is a flexible interpretive approach to qualitative data analysis that facilitates identifying and analysing patterns or themes in any dataset (Braun & Clarke, 2012). It rejects any positivist notion of data interpretation (Boyatzis, 1998) and embraces reflective, subjective and creative assets in knowledge production (Braun & Clarke, 2019). This study utilised a reflexive thematic analysis approach to analyse interview data (Braun & Clarke 2019, 2020; Creswell 2014). I adopted an inductive or ‘data-driven’ and deductive approach to data coding (Byrne, 2021). This process is not linear but is recursive and iterative and requires a researcher to move back and forth between coding phases and consult the literature (Braun & Clarke, 2020). The work of Braun and Clarke (2012, 2019, 2020), Sendze (2019), and Byrne (2021) were studied to develop a six-step reflexive thematic analysis flowchart tailored for this study, as shown in Figure 4.1.

**Step 1: Becoming familiar with the data**

This step started with the transcription of the 12 interviews into textual data (e.g. transcripts), after which two additional interviews were transcribed to confirm data saturation. Afterwards, I delved into the data by reading transcripts, interview field notes and audio recordings. I immersed myself deeply in the data to become familiar with it (Braun & Clarke, 2006, 2012, 2019). While I read and reread the transcripts, I used the analytical lens of reading to identify ideas or concepts in the data for encoding.

### Step 2: Generating code list

Data coding simplifies big “chunks” of data by capturing key concepts or ideas from raw data and reducing it to understandable findings (Adu, 2016; Saldaña, 2016). Step 2 started with a systematic analysis of the data, using manual coding, by writing comments next to relevant ideas or excerpts in the transcripts using Microsoft Word. Subsequently, a codebook was developed in an Excel sheet, and a finalised coding list was compiled using ATLASti.23. A mixed method of coding data using descriptive and interpretative codes was used in this study. Iterative coding was performed at the semantic (deductive) or latent (inductive) level of meaning (Byrne, 2021). Concerning deductive coding, I started with predetermined codes and applied them to datasets derived from similar studies (Grad Coach, 2021; Skjott Linneberg & Korsgaard, 2019). In semantic or descriptive coding, a researcher remains very close to the content of the data and participants’ meanings (Braun & Clarke, 2012). Latent or interpretative coding identifies meanings that lie beneath the semantic surface of data (Braun & Clarke, 2012). This coding works in reverse, by creating a set of codes based on the studied data (Grad Coach, 2021). In other words, it refers to codes identified from the datasets (Skjott Linneberg & Korsgaard, 2019). Attributes, patterns, emotions, magnitudes, process and theme coding were used to code the data and capture relevant experiences of patients related to the phenomenon under study.

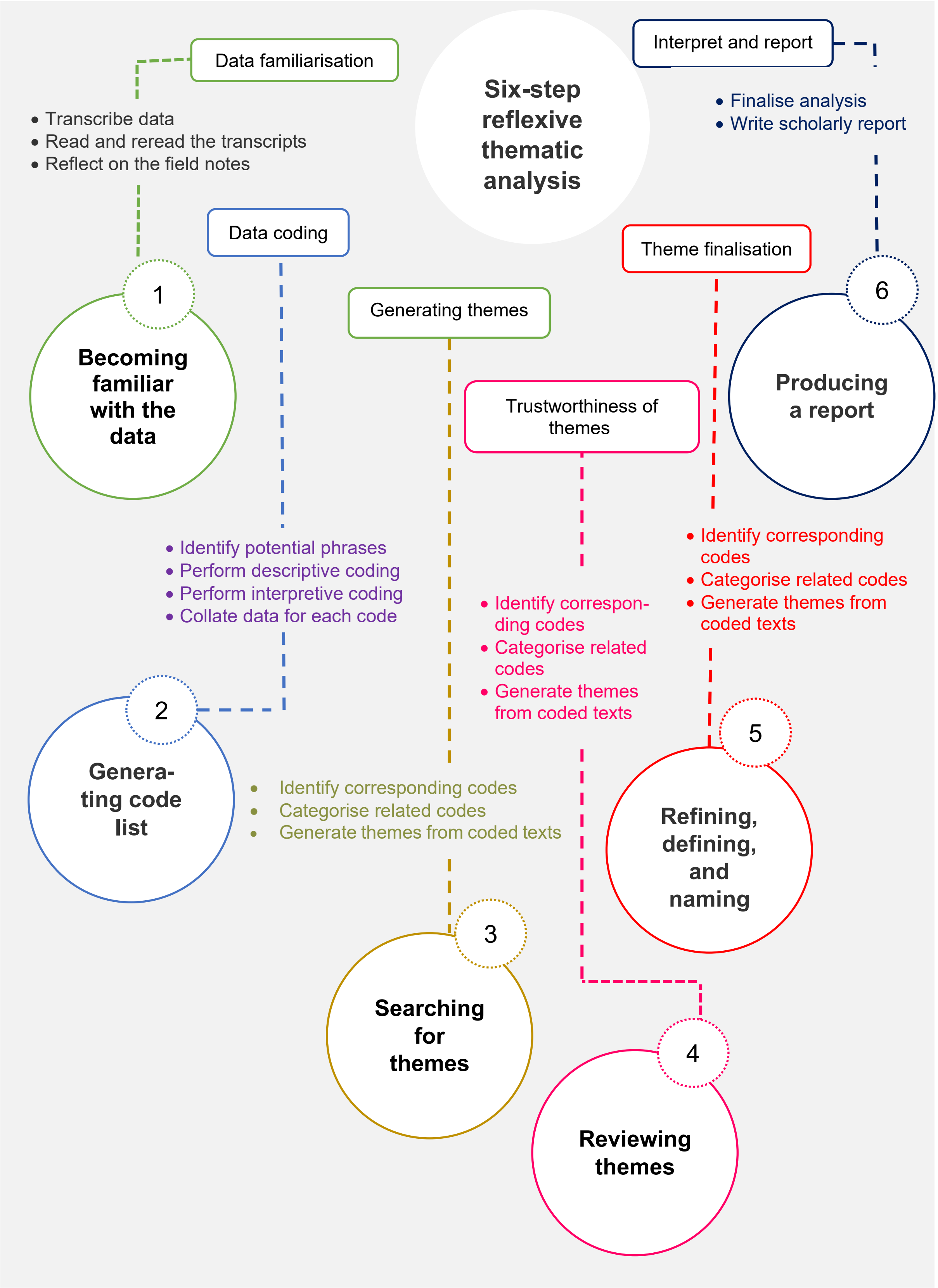

**Figure 4.3: A six-step reflexive thematic analysis flowchart (adapted from Braun and Clarke [2019]; Sendze [2019])**

### Step 3: Searching for themes

At this point, data analysis started to take shape when codes were clustered into a single code that shared a similar underlying concept or feature with the data (Byrne, 2021). Emphasis shifted from interpreting individual data codes to interpreting the collective meaning of codes within the dataset (Byrne, 2021). I ensured that a theme presented trends with similar meanings that were broader and encompassed more than one specific idea or experience. The themes were neither discovered nor emerged from the dataset but were developed using coded extracts.

### Step 4: Reviewing themes

The themes were reviewed and revised based on coded data. The analysis conducted in this step involved two review levels. The first level reviewed the relationships between the data items and codes that inform each theme and subtheme. The second level assessed the extent to which the themes provided the most appropriate interpretation of the data concerning the research question (Byrne, 2021). As advised by Braun and Clarke (2012), I asked the following key questions while reviewing the thematic map of analysis:

- Is this a theme (it could just be a code)?
- Does the theme tell me anything useful about the dataset and research question?
- What are the boundaries of this theme (what does it include or exclude)?
- Is there meaningful data to support this theme (is the theme thin or thick)?
- Is the data too diverse and wide-ranging (is there coherence in the theme)?

### Step 5: Refining, defining and naming themes

This step involved an in-depth thematic analysis to refine the data analysis to the smallest detail (Braun & Clarke, 2012). The main objective of this step was to identify the overall themes, what “each theme is about” (Braun & Clarke, 2006), and what aspects of the data are represented by each theme. Before finalising the thematic map, the following were checked: (1) the relationships between the themes; (2) the interconnection between the main theme and subthemes; and (3) aspects of the data represented within each theme (Braun & Clarke, 2012). This step led to a more precise thematic map for producing the scholarly findings.

#### Step 6: Producing a report

The final step involved the final analysis and write-up of the report, though the analysis and the writing of qualitative research reports generally occur simultaneously (Braun & Clarke, 2012). In this step, I ensured that the report told a simple, straightforward, convincing and coherent scientific “story” (Braun & Clarke, 2012) that was rooted in the qualitative research paradigm. By presenting themes logically and meaningfully, male patients’ experiences could be interpreted to improve our understanding of the phenomenon studied. Where relevant, themes were connected to previously identified ones while maintaining internal consistency and the ability to convey their narratives independently (Braun & Clarke, 2012).

### 4.11.2 Data analysis in quantitative Phase 2

This phase adopted a deductive reasoning logic to move from broad assumptions to a specific conclusion (Saunders et al., 2009). Data from the questionnaires were captured using QuestionPro, an online survey tool that generates the preliminary descriptive findings. The Statistical Package for the Social Sciences (SPSS Version 29) was used to prepare the data for quantitative data analysis. Nominal, ordinal, interval and descriptive data were captured and exported to the SPSS program to generate descriptive and inferential statistics. Descriptive statistics were used to summarise the respondent demographics and other categorical data. Descriptive analysis was used to describe the demographic characteristics and data patterns that had been identified. Findings are presented using bar charts, frequency tables and percentages. Cross-tabulation analysis examined relationships between categorical variables. Additionally, a Chi-square analysis was performed to determine if there was a significant relationship between the categorical variables mentioned above, using the *p*-value. A qualitative analysis of the responses to the questionnaire open-ended questions was performed to obtain further insight into the quantitative findings.

#### *4.11.2.1 Coding and data editing*

At the end of the data collection, I edited and cleaned the dataset to prepare it for data coding in the SPSS program. Quantitative data usually needs to be coded numerically to allow fast data recording with fewer errors (Saunders et al., 2009), except for textual or graphical data types. Therefore, the respondents’ responses were assigned binary variables during the coding phase. For example, male participants were given a binary variable of 1 and female participants a binary variable of 2.

#### *4.11.2.2 Data screening*

Data screening is a preliminary analysis to prepare research data for statistical analyses. Several studies explain the analytical importance of data screening exercises and preliminary analyses (Abubakar et al., 2017; Gorondutse & Hilman, 2014; Saidu Badara & Zabedah Saidin, 2014). Thus, it is important to check for errors in data entry and other possible mistakes and to rectify and correct identified errors (Pallant, 2016). Lawan (2011) describes it as a crucial phase of any multivariate analysis and fundamental to generating meaningful findings from quantitative research. By completing this process, I ensured the quality, completeness and consistency of the data and met the assumptions and testing requirements.

#### *4.11.2.3 Handling of numerical statistics and free-text responses*

After analysing the numeric data, all free-text responses to the questionnaire administered to RTTs were transcribed and coded using the ATLAS.ti 23 software. Inductive content analysis was then undertaken on free-text responses to the open-ended questions of the questionnaire. I started the analysis by reading each response to become familiar with the dataset. Then, I coded the responses and grouped overlapping codes into higher-order categories guided by Elo and Kyngäs (2008) method. Content analysis makes it possible to analyse respondents' free-text responses and to quantify the data using a number of occurrences of particular reasons in response to open-ended questions in the questionnaire (Grbich, 2013; Mamabolo & Myres, 2019). Responses on the same theme or idea were grouped. In cases where respondents provided a response with more than one theme, each response was placed under the correct response category and counted accordingly (see Table 6.8). I then used Excel to calculate percentages and display and summarise the final categories numerically in graphs such as bar charts, pie charts or tables. This approach enhanced an understanding of respondents' attitudes, experiences or viewpoints by relating the study context to the frequency of respondents' statements in the dataset.

Content analysis led me to use a descriptive approach to code the qualitative data (Downe-Wamboldt, 1992; Morgan, 1993; Vaismoradi et al., 2013) using quantitative counts of the codes. In summary, content analysis made it possible to analyse free-text responses and obtain a deep understanding of the following issues: (i) reasons why RTTs avoided addressing sexual health issues of men treated for prostate cancer; (ii) reasons given by RTTs on the influence of gender, culture and religion on conversations about sexual health in men with prostate cancer; and (iii) opinions of RTTs on the support they require to deal with sexual health challenges of men receiving radiotherapy for prostate cancer. The analysis process described in this section was intended to provide meaning and context for measurable statistics by integrating narrative responses with numerical data (Uprichard & Dawney, 2019). Doing so enhanced my understanding of a phenomenon that was studied from different worldviews.

## 4.12 SCIENTIFIC RESEARCH RIGOUR

Rigour is defined as the quality or state of being accurate and careful, or with strict precision, or the quality of being meticulous and precise (Merriam-Webster, 2016). The concept of trustworthiness is used to explain qualitative research rigour (Schmidt & Brown, 2021). It is related to the level of confidence readers have in the results, and their relevance (Cypress, 2017). Sections 4.12.1 and 4.12.2 describe the strategies, measures or criteria used to achieve scientific rigour throughout this mixed methods research project.

### 4.12.1 Establishing trustworthiness in qualitative Phase 1 research

Guba and Lincoln (1994) propose four criteria for assessing trustworthiness in qualitative research. Research is regarded as of good quality when it respects four strategies of trustworthiness that are relevant to both quantitative and qualitative studies: (i) truth value; (ii) applicability; (iii) consistency; and (iv) neutrality (Guba & Lincoln, 1994; Lincoln & Guba, 1985). The trustworthiness of this phase was ensured by using the strategies, measures, and criteria listed in Table 4.3.

**Table 4.3: Strategies to maintain trustworthiness (Botma et al., 2010; Krefting, 1991; Polit & Beck, 2012)**

| Strategy | Measures | Criteria |
|---|---|---|
| Truth value | Credibility | - Authority of the researcher (field expert)<br>- Interview technique<br>- Triangulation |
| Applicability | Transferability | - Selection of participants<br>- Interview setting<br>- Dense description of research procedures<br>- Saturation of data |
| Consistency | Dependability | - Dependability audit trail<br>- Dense description of methods<br>- Use of reputable coding software<br>- Expert audit review |
| Neutrality | Confirmability | - Confirmability audit trail<br>- Triangulation<br>- Reflexivity |

#### *4.12.1.1 Truth value*

Credibility refers to reliance on the truth of the data for participants and the context in which the study was undertaken (Krefting, 1991; Lincoln & Guba, 1985; Polit & Beck, 2012). According to Patton (2014), credibility is the extent to which a study's findings accurately reflect the narratives of participants' experiences.

a) Authority of the researcher

I have authority in this area of research because I have practical experience working as an RTT in a hospital environment. Furthermore, I have developed credible skills in using qualitative research methodology, as my Master's research project focused on men's psychosexual experiences after radiotherapy. Additionally, the supervisors and co-supervisors are well-versed in the qualitative research methodology; furthermore, each has experience working as an RTT, which justified their authority to oversee this study.

b) Interview technique

I first initiated a social chat with the participants to build a good rapport off-record before we commenced prolonged engagement to explore men's sexual experiences.

I used unstructured probing and repetitive questions that asked the same thing in different ways, and expanded the questions at various times to increase credibility. All conversations were participant-led, though I guided the participants to stick to the research topic during the interviews.

c) Triangulation

To maintain the true value of the qualitative findings, I conducted within-method data triangulation through a comprehensive analysis of the interviews. This involved considering recorded interviews, field notes and transcripts. I listened to field notes and played audio recordings to review the transcriber's work. By doing this, I ensured that the transcripts reflected what was said in the audio recordings, thereby strengthening the credibility of the research outcome.

#### *4.12.1.2 Applicability*

Applicability relates to the transferability of findings to other settings or groups of people (Krefting, 1991; Polit & Beck, 2012). However, this criterion has been dealt with differently in qualitative research. Lincoln and Guba (1985) claim that, if the researcher provides sufficient descriptive data for comparison, it could address the issue of applicability. To ensure applicability, I provide adequate information on the selection of participants, interview context, a dense description of the study procedures and how data saturation was achieved.

a) Selection of participants

The method for selecting male patients was purposive sampling because this study focused on participants with common characteristics, as described in Section 4.9.3. Paragraph 4.9.4.1 describes the patient recruitment process to facilitate the replication of this study for those who may wish to do so in the future.

b) Interview setting

All interviews were conducted in a natural setting in the oncology clinic rooms or at a convenient and safe place (usually, home) for male patients. A relevant interview context created an environment where interviewees could feel content and freely share the best information to answer the research questions.

c) Dense description of the research procedures

In this chapter, I explicitly describe all procedures performed during data collection and analysis (Avenier & Thomas, 2015). I provide descriptive data for others to describe and compare the same phenomena or experiences studied here in different settings or populations.

d) Saturation of data

Interviews were conducted until data saturation was achieved. The next chapter will describe how data saturation was achieved in qualitative Phase 1. My supervisors and I agreed on the data saturation point during the data analysis phase.

#### *4.12.1.3 Consistency*

Data consistency refers to whether the findings would be consistent if the research enquiry were repeated with the same subjects or in a similar setting using the same testing procedures (Krefting,1991). A qualitative researcher is part of research methods; therefore, the consistency of qualitative research can vary significantly when another researcher repeats the study (Krefting, 1991). Qualitative research is concerned with the uniqueness of human situations; thus, variability in experiences is expected instead of similar findings being sought (Field & Morse, 1985). In interpretivist research, consistency is defined in terms of dependability, similar to the concept of reliability in positivist research (Thomas & Magilvy, 2011).

a) Dependability audit trail

Data collection and analysis techniques were documented and described to ensure the research process was dependable. For example, the interviews were conducted in English, but participants who did not speak English had the opportunity to speak their native language. In addition, audio recordings were transcribed by an independent transcriber who was fluent in the African languages spoken during the interviews.

b) Dense description of the data study tools

To ensure consistent data collection, I conducted and analysed all interviews using a standard interview guide, thereby minimising variability despite the subjective nature of qualitative research. My ability to understand and speak most languages in Gauteng province facilitated this process.

c) Use of reputable coding software

The interview data were coded using reputable software (ATLAS.ti 23), licenced through the Central University of Technology.

#### *4.12.1.4 Neutrality*

Neutrality refers to the extent to which findings are a function of informants and research conditions rather than from other biases, motivations and perspectives (Guba, 1981). Objectivity is the criterion for neutrality in quantitative research and is achieved through reliable and valid research methods (Krefting, 1991). Confirmability describes the neutrality criterion in qualitative research.

a) Confirmability audit trail

I created an audit trail of the descriptive codes on ATLAS.ti 23 to demonstrate how they unfolded from the data (raw data, field notes, code descriptions, memos and reports) and to enhance the confirmability of the study's findings. Similar patterns in the dataset that led to themes and subthemes were corroborated by traces of codes and rich textual descriptions of the participants (Saldaña, 2016).

b) Triangulation

Using paper surveys in the quantitative phase aided triangulation and complementarity of the findings. Jick (1979) and Turner et al., (2015) posit that triangulation helps minimise the researcher's biases and increases confidence in conclusions. I triangulated the interview data with quantitative data to cross-check and validate the evidence in the findings.

c) Reflexivity

Aamodt (1982) explains that the qualitative approach is reflexive and that the researcher is an integral part of the study. Reflexivity involves the researcher's reflective engagement with their data and the analytic process (Braun & Clarke, 2019), which is often influenced by the researcher's personal history and experience on the topic. I maintained a double role as a doctoral student and experienced RTT. As a doctoral student, I wanted to conduct a mixed methods study and present findings based purely on research participants' experiences. Nevertheless, as an RTT, I was trained to help, which motivated me to look for a specific and practical model to facilitate sexual health issues in radiation oncology, in what I saw and perceived as a need. I was responsible for remembering the potential influence of these two roles in this study. To minimise bias and ensure trustworthiness, I described the theoretical framework used to describe how I interpreted and discussed the findings of the study. I also show that the findings were drawn directly from the data by providing rich, direct patient quotes that support the identified themes.

### 4.12.2 Establishing reliability and validity in quantitative Phase 2 research

Before starting the research, each researcher must consider the validity, reliability and objectivity of the research instruments and data analysis tools (Zohrabi, 2013). According to Heale and Twycross (2015), in quantitative studies, rigour is achieved through the measurement of validity and reliability. In addition, Guba and Lincoln (1994) point out that positivists believe that research is of good quality if it has (i) internal validity; (ii) external validity; (iii) reliability; and (iv) objectivity. These measures were implemented in this study, as follows:

#### *4.12.2.1 Validity*

Validity refers to the extent to which a measure's scores represent the intended variables (Chiang et al., 2015). It also refers to whether a researcher may make significant inferences based on instrument scores (Creswell, 2009). As is the tradition for the exploratory sequential mixed methods study design and to maintain the internal validity of the quantitative Phase 2 findings, qualitative Phase 1 findings were used as the basis for a questionnaire. Field experts were used to test the questionnaire for face validity during a pilot study.

#### *4.12.2.2 Reliability*

Reliability refers to the consistency of a measure (Chiang et al., 2015). In other words, the extent to which a research instrument always has the same findings when used repeatedly in the same situation (Heale &Twycross, 2015). Reliability is an expression of consistency and repeatability over time, and contributes to validity. I consider the survey instrument reliable as it was piloted with a purposive sample of 10 RTTs at one research site (Hospital A), and no major revision was required to be made to the questionnaire before being rolled out for data collection in the quantitative Phase 2. A biostatistician reviewed the quantitative Phase 2 data analysis methods to ensure that the study findings are reliable and valid.

#### *4.12.2.3 Objectivity*

Scientists are considered objective when they study phenomena without having a predetermined position about the research outcome (Rehman & Alharthi, 2016). As a pragmatist, I believe that facilitating sexual health in patients can be objectively studied from the perspective of RTTs. I attained objectivity in framing questionnaire questions through the qualitative Phase 1 findings. My role in quantitative Phase 2 was confined to data analysis and interpretation because I was not the instrument to collect data, compared to Phase 1, thereby contributing to the objectivity of Phase 2.

## 4.13 SUMMARY

This chapter covered the key aspects of the research methods and design, including research philosophy, data analysis and ethical considerations. Pragmatism was chosen as the research paradigm, and the extended research onion was used as a framework to design this research study and select appropriate methods to explore the research problem. The exploratory sequential mixed method design addressed the research problem using two worldviews for a single study. The data collection methods for each phase were justified, and detailed descriptions of the data analysis techniques for qualitative and quantitative approaches were provided. In addition, measures to ensure the trustworthiness and reliability of the study were outlined. The next chapter presents the results of Phase 1, which involved interviews with male patients who had been treated for prostate cancer.

# CHAPTER 5

# QUALITATIVE FINDINGS (PHASE 1)

*All research ultimately has a qualitative grounding.*

Donald Campbell

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## 5.1 INTRODUCTION

This chapter presents the findings on men's experiences following prostate cancer diagnosis and radiotherapy, as well as their perspectives on SCMSH in radiation oncology settings. These findings will be interpreted in the context of the relevant literature. The qualitative Phase 1 of this exploratory sequential mixed method study sought to answer this research question: How did men experience the facilitation of sexual health in radiation oncology during and after radiotherapy for prostate cancer? This study employed a QUAL → quan mixed methods notation, which indicates that Phase 1 was more dominant. The qualitative findings of Phase 1 guided the development of the survey instrument for Phase 2, thereby shaping the data collected in Phase 2.

## 5.2 PARTICIPANT DEMOGRAPHICS

In Phase 1, 12 men who had been treated for prostate cancer were interviewed at a radiation oncology setting in Johannesburg, Gauteng province. These participants, aged 56–86 years, were predominantly Black Africans and unemployed and resided in townships around Johannesburg. They had received radical radiotherapy for prostate cancer, with most completing a total dose of 45 Gy at 3 Gy per fraction in the past six months or longer.

## 5.3 FINDINGS

After completing the six-stage reflexive thematic analysis described in Chapter 4, codes were identified and grouped into different categories in ATLAS.ti 23. These categories were then grouped into four overarching themes and seven subthemes (see Table 5.1). Themes 1 and 2 have strong links, with an emphasis on the first-hand experiences of men grappling with erectile dysfunction. Findings are presented as themes and subthemes developed from analysis of interview transcripts backed up by verbatim quotations of participants. In this study, verbatim quotations are denoted as, for instance, P01Intv., where P and Intv. stand for the participant and interview conducted during Phase 1, respectively. Participants in Phase 1 were men who had completed radiotherapy for prostate cancer in radiation oncology departments.

**Table 5.1: An overview of themes and subthemes**

| Themes | Subthemes |
|---|---|
| 1. Experiences of men after treatment of prostate cancer | 1a. Emotional well-being of men with erectile dysfunction |
| 2. Sexual lives of men after prostate cancer treatment | 2a. Impact of loss of erection on intimate relationships |
| | 2b. Attitudes of men living with erectile dysfunction |
| 3. Treatment interventions for erectile dysfunction | 3a. Pharmacological therapy |
| | 3b. Integrating beliefs and complementary medicine |
| 4. Facilitation of SCMSH | 4a. Couple counselling support services |
| | 4b. Challenges in men’s sexual health supportive care |

### 5.3.1 THEME 1: Experiences of men after treatment of prostate cancer

Several participants reported experiencing erectile dysfunction after receiving a prostate cancer diagnosis and androgen deprivation/hormonal and radiotherapy. The findings show a varied spectrum of challenges that traversed the psychological, sexual, social, emotional and physical dimensions of men treated for prostate cancer. These challenges include decreased penis size, reduced libido, orgasm changes (anorgasmia) and ejaculation dysfunction. After radiotherapy for prostate cancer, a considerable number of men experienced anejaculation. The supporting quotes from participants on this theme are given below:

> *What made me come to the hospital for a prostate cancer test was when I started experiencing weak erections. So, I went to the hospital where they found out about the prostate cancer issue. P08Intv.*
>
> *Was it weak before the surgery? affirmed, Yes, it was already weak. P07Intv.*

> *I wanted to ask him about ... when I went home, I said to my wife, 'Hey, something is not right: like the hair; like everything down there – the penis was also shrinking. P02Intv.*

> *I was told that I will no longer feel like having sex because the more sex I have, the more active the disease becomes. So, the injection kills the feelings. P05Intv.*

> *Yes, I was a little bit strong, but I was not ejaculating or anything. I see something coming out when I ejaculate, but it is water. P08Intv.*

Many participants in this study reported a decline in sexual activity following their prostate cancer diagnosis, with reasons that the changes in sexual functioning extended beyond erectile dysfunction to include reduced desire, pleasure, low libido and weaker or absent erections, particularly after starting androgen deprivation/hormonal therapy. Participants reported the following:

> *Yes, I received the injection from 2014 until 2019 … Yes. In 2014, it was no longer the same. After the injection, the sex drive was almost gone … I do not have the power. P08Intv.*

> *The performance was good before I got affected. Within two years, I started losing interest. I told her that we would just be lovers, but I was weak in terms of sexual performance. P02Intv.*

> *Yes, the one injected in the stomach. After I told the doctor that my erection was getting weaker, he said that it would only be temporary, it would not be forever. P03Intv*

Erectile dysfunction in men with prostate cancer is not only a consequence of prostate cancer treatment but is also related to the pathology of the disease itself (Hyun, 2012). Androgens are essential for the growth and development of the prostate gland and gonadal androgen deprivation/hormonal therapy is the cornerstone of treatment (Desai, McManus, & Sharifi, 2021). Androgen deprivation therapy causes a dramatic drop in serum testosterone levels, which can impair sexual function in men and lead to erectile dysfunction and low libido (Mazzola & Mulhall, 2012; Gryzinski et al., 2022). Other side effects of androgen deprivation/hormonal therapy include anaemia, gynaecomastia, fatigue, vasomotor flushing and impaired cognitive function (Joyce et al., 2022; Kumar et al., 2005). Androgen deprivation/hormonal therapy for prostate cancer is responsible for more than 80% of couples affected by this disease ceasing penetrative sexual intimacy (Duthie et al., 2020; Wassersug et al., 2023).

#### 5.3.1.1 Subtheme 1a: Emotional well-being of men with erectile dysfunction

Many participants felt emotionally frustrated and pained by the feeling of living with sexual impotence. In the stories told by the participants, feelings of emasculation, low self-esteem, shame, embarrassment and fear of sexual intimacy were noted. Interviews with the participants also identified behavioural changes such as increased irritability, social withdrawal and a tendency to abuse alcohol. Though emotional stress and frustration were expressed by participants living with erectile dysfunction who had younger partners, senior participants were less concerned about weak erections.

> *Women will hurt you with words like, I might as well be sleeping with my brother. In the meantime, you are the ones with this problem. Such words can destroy you. P03Intv.*
>
> *It disturbs and hurts us as men because just after you have taken radiation, everything changes. Your home life also changes, which is tough for some men, especially…Some men here … you will find a 69-year-old man with a wife of 40, then it becomes a problem. P04Intv.*
>
> *When you come home drunk, not minding them, they provoke you. P07Intv.*
>
> *No. She does not even like to talk about such things. She says she is old, and it makes her tired. She wants nothing to do with it. P07Intv.*
>
> *She knows but does not mind because she also no longer has those feelings. Her feelings disappeared before mine. P10Intv.*

The emotional stress and frustration caused by a decline in sexual function after radiotherapy and androgen deprivation/hormonal therapy left many participants feeling emasculated and sexually impaired, which negatively impacted their overall well-being. Deterioration in sexual function in patients has far-reaching and adverse effects on psychological well-being, relationship satisfaction and quality of life (McSharry et al., 2016). Emotional, physical, mental, relationship and financial stresses related to a cancer diagnosis and treatment could contribute to erectile dysfunction (Madan et al., 2020).

### 5.3.2 THEME 2: Sexual lives of men after prostate cancer treatment

Participants with weak erections before radiotherapy for prostate cancer reported a gradual decline in erectile function during treatment. Some experienced random weak erections, while others had none after radiotherapy and androgen deprivation/hormonal therapy. Despite persistent erectile dysfunction, many participants reported having a sexual desire. Only a few gradually regained sexual function after prostate cancer treatment. The following are verbatim quotes of participants describing their sexual lives after radiotherapy for prostate cancer.

> *Your life in the home also changes, and this is tough for some men, especially … Some men here … you will find a 69-year-old man with a wife of 40, then it becomes a problem. P04Intv.*
>
> *As time went by, I no longer had an erection. I would have little erection, but once I started going there with my wife, I would flop, and it would go numb. P01Intv.*
>
> *It was not as strong as before. Sometimes, I would feel like having sex …. It was not completely flat. It would only come sometimes. P12Intv.*
>
> *After I finished with my radiation and injection, my erection came back. P03Intv.*
>
> *It comes up a little bit, but it needs a lot of concentration. P08Intv.*
>
> *No, sometimes it gets up out of the blue. P06Intv.*

The negative sexual experiences of participants with erectile dysfunction after prostate cancer diagnosis and treatment compromised the quality of their lives, as many participants struggled to regain erectile function after radiotherapy and androgen deprivation/hormonal therapy. The likelihood of erectile recovery after radiotherapy is influenced by the disease stage, which also dictates the protocol for androgen deprivation/hormonal therapy administration (D'Angelillo et al., 2015; Isbarn et al., 2009; Mainwaring et al., 2021; Shore, 2020). Haining et al., (2024), Joyce et al., (2022), and Phahlamohlaka et al., (2018) report similar findings regarding the negative effect of erectile dysfunction on intimate relationships.

#### *5.3.2.1 Subtheme 2a: Impact of loss of erection on intimate relationships*

Certain participants reported experiencing erectile dysfunction for more than five years after prostate cancer treatment, with challenges relating to intimate relationships being a common aspect of their daily lives. On many occasions, participants found themselves involved in petty arguments with their spouses, leading to emotional and sexual detachment. Moreover, several participants expressed dissatisfaction with their partners for being disrespectful and impolite and using insensitive language to mock them sexually. One participant shared his experience of being hurt, embarrassed, belittled and humiliated because his partner spread gossip about his erectile function challenges. Some couples resorted to sleeping in separate bedrooms, and some men decided to forgo romantic relationships to safeguard their mental well-being and integrity. The participants' stories revealed the following:

> *Even today, it is still not strong enough. Sometimes it does not want to wake up at all. P12Intv.*
>
> *Since 2013, after the operation, I have not slept with her. It has been six years now. This year will be the seventh. She sleeps with the grandchildren; I sleep in the other bedroom. P07Intv.*
>
> *I think because I no longer sleep with her, she does not respect me anymore. P07Intv.*
>
> *Yes. She said that I only look like a man, but I am not a man in bed. P10Intv.*
>
> *When we fought last week, I felt like taking all the money I have and go look for a house somewhere else. She will only receive divorce. P09Intv.*

Participants between the ages of 55 and 65 years seemed to find the experience of erectile dysfunction particularly distressing and challenging to deal with, especially if their younger spouses were still in their childbearing years and wished to conceive. A common struggle for these participants was to fulfil the sexual needs of their partners with firm erections. In response to weak erections, one participant resorted to alternative sexual methods to satisfy his spouse's sexual needs without engaging in penetrative sex.

> *These days, I try different things to satisfy my wife, like hanging out with her and using a finger. P08Intv.*

> *Your life in the home also changes, and this is tough for some men, especially … Some men here … you will find a 69-year-old man with a wife of 40, then it becomes a problem. P04Intv.*
>
> *From your side, do you think that I can ever have babies or have normal sex? P08Intv.*
>
> *I still look young, and I still have a wife. It really is painful, my brother. P07Intv.*

Participants who were single, divorced, or widowed shared stories of their struggles to form new intimate relationships. These participants attempted to have asexual relationships with women, but such relationships never lasted. They eventually avoided sexual intimacy to avoid embarrassing themselves, and eventually became resentful about their inability to have intimate relationships with women. The evidence is clear in the following comments of participants:

> *She did not even know. When she came back, matters had gotten worse. P06Intv.*
>
> *It has been nine years now. I do not care about women; I stay alone. P11Intv.*
>
> *Yes, it does not work; it is like you are family. P09Intv.*
>
> *What am I going to do with a woman? They are going to discuss me again. P11Intv.*

The findings depict participants as vulnerable, hopeless, and desperately seeking help to save their intimate relationships; however, help seemed difficult to find. The impact of erectile dysfunction on these relationships was devastating and emotionally draining and often resulted in sexual detachment, communication challenges and the breakdown of some relationships. Therefore, it is important for treatment for erectile dysfunction to work towards treating both the man and his partner, rather than the male patient being treated in isolation (Vance et al., 2022). Men living with erectile dysfunction often experience a decrease in self-esteem and confidence, and their partners may feel neglected or unattractive (Allen et al., 2023).

#### *5.3.2.2 Subtheme 2b: Attitudes of men living with erectile dysfunction*

Findings indicate that emasculated participants felt insecure and anxious about losing their partners to other men; this was particularly true for those with younger spouses.

At the same time, these participants were found to be caring and considerate of their spouses' sexual needs and their partners' desire to conceive babies. Some older participants had accepted their sexual impotence, particularly those with elderly spouses who were ill and lacked sexual desire. Additionally, participants reported that men undergoing radiotherapy for prostate cancer are not always honest with each other about their condition during social interactions while they wait for treatment in the radiation oncology department.

> *I do not feel good about it, because the person I am with now does not get nothing. P06Intv*
>
> *Sex is an important part of life, especially between her and me, because we are lovers. It must be there. P09Intv.*
>
> *The gents know that nobody can steal my lady. Ladies steal me from each other. P07Intv.*
>
> *He was worried that he could not do anything with his wife, and so on. He was worried that his wife would go out and look for someone to help her. P04Intv.*
>
> *Most of them are not open to talking about such things. They never tell you exactly what is going on with them. P07Intv.*

Survivors of prostate cancer appear to have higher rates of seeking medical help for erectile dysfunction than other cohorts of sexually dysfunctional men (Schover et al., 2004). The participants showed a range of attitudes stemming from the personal challenges they faced living with erectile dysfunction. Many of these participants demonstrated a proactive attitude to seeking help to bring back their sexual function, hence they explored various treatment options for erectile dysfunction to restore masculinity. The stigma and shame associated with erectile dysfunction led some participants in this study to feel embarrassed about their condition, making them reluctant to seek help or discuss their concerns openly with oncology health professionals, partners or loved ones. Male patients in a study by Buote et al., (2020) described prostate cancer diagnosis and treatment as an emasculating journey, in which they experienced changes in their self-concept and identity. They often used humour and avoidance as coping strategies.

### 5.3.3 THEME 3: Treatment interventions for erectile dysfunction

Experiences shared by several participants indicate that their spouses' increasing impatience about their erectile dysfunction heightened their concerns, stress levels, anxiety and urgency to continue seeking treatment for erectile dysfunction. Participants found themselves in a desperate search for readily available and reasonably priced erectile dysfunction treatment options that they could afford, to maintain their sense of masculinity, as the following quotations illustrate:

> *That is why I want to go to the men's clinic; maybe I might find a solution there. No, I forget their names. I used to take them. P07Intv.*
>
> *No. I want to do so because my wife has been giving me a hard time in that situation. But I made her understand, because when I told doctors about my sexual problems, they said that I could be hard all the time, but I would be dead after six months. P08Intv.*

Conversely, some men prioritised their overall well-being during prostate cancer treatment over their sexual health, by following doctors' orders and refraining from taking erection-enhancement pills without informing their doctors. However, others took a different approach and used over-the-counter drugs. This is evident in the following excerpts from the patient transcripts:

> *I did not want to die, so I just continued with treatment. This is how I explained it in the same way as my wife. I told her that maybe the treatment would take me back to what I used to be. I do not know; I will see what happens after treatment. P08Intv.*
>
> *Yes, because sometimes you would buy something, but it will only make it worse. P02Intv.*

Generally, whether men seek medical help for sexual health problems depends on practical barriers, such as their financial situation, availability of care and adherence to traditional masculine roles (Hyde et al., 2016; Schover et al., 2004). In many African cultures, masculinity is closely linked to sexuality and reproduction, which put undue pressure on the participants to seek medical help for erectile dysfunction. In this study, most participants with erectile dysfunction were referred to the men's clinic for pharmacotherapy. The common interventions for erectile dysfunction include vacuum erectile devices, pharmacotherapy, penile prosthesis, topical therapy, intracavernosal injection, hormonal treatment, psychosocial interventions and complementary and alternative medicine treatments, with varying use and effectiveness in specific cases (Ciocanel, et al., 2019; McMahon et al., 2006; Mehr et al., 2023).

#### *5.3.3.1 Subtheme 3a: Pharmacological therapy*

The experiences of participants with erectile dysfunction reveal that, although they were treated with PDE5 (Phosphodiesterase Type 5) inhibitors at men's clinics, many reported that these drugs were ineffective in restoring their erectile function. In turn, some participants reported that they had improved their erections during radiotherapy for prostate cancer by using over-the-counter pills. Still, the positive effects were temporary and disappeared after treatment. One participant added that the medications prescribed at the men's clinic increased his blood pressure without improving erectile function. On the other hand, one participant claimed that the erection-enhancement pills he had bought from a Chinese store helped him regain his erection. Below are examples of participants' quotations:

> *They did nothing. I have become very forgetful these days. Do you understand? I think it is Viagra. Yes, Viagra. I normally buy it: it never does anything. P07Intv.*
>
> *When I was deep in treatment, I tried out some pills. Some of the pills which they gave me used to help sometimes, but they no longer worked. P03Intv.*
>
> *I went to the chemist here in town to look for erection tablets, but they only increased my blood pressure, and nothing happened. P05Intv.*

Non-medical therapy or a combination of non-medical and drug therapies are used to enhance sexual function in men with erectile dysfunction, including those with prostate cancer (Atallah et al., 2021; Bokaie et al., 2022). First-line therapy for erectile dysfunction often involves pharmacotherapy using PDE5 inhibitors such as sildenafil (Viagra), tadalafil (Cialis), and vardenafil (Levitra) (Huang & Lie, 2013; Islam et al., 2022; Roth et al., 2008). This finding aligns with the participants' accounts reported in this study. While this study did not explore the reasons why many participants did not respond to PDE5 inhibitors, it is known that a multitude of factors cause erectile dysfunction. These include hormonal, neurological and vascular issues, medication and cancer treatment side effects and comorbidities (Aversa et al., 2015; Cayetano-Alcaraz et al., 2023; Ferguson & Carson, 2013). Given these complexities, it is important for men with erectile dysfunction after prostate cancer treatment who do not respond to PDE5 inhibitors to be referred to specialists for further diagnostic investigations into the underlying causes of this condition or alternative therapies.

#### *5.3.3.2 Subtheme 3b: Integrating beliefs and complementary medicine*

A few participants integrated African and Chinese traditional remedies and pharmacotherapy with ancestral beliefs and religious practices as their method to address erectile function challenges after radiotherapy and androgen deprivation/hormonal therapy for prostate cancer. For example, one participant reported using a medicinal plant concoction known as *Pitsa* and tea provided by Zion Christian Church to boost his sexual desire and erectile function. This finding is evident in the following stories:

> *I tried Pitsa [a concoction of herbs]. The gents would advise me to try a certain Pitsa, but it was just temporary. I would drink Zionists' tea and feel like. P10Intv.*
>
> *You see my brother, as an individual, I believe a lot in my ancestors. Had they not given me that instruction, I still would not be able to get an erection. I would be a useless man. Do you understand? P03Intv.*
>
> *Some things you must make for yourself. I use it [sex pills from a Chinese store] along with Panado for headaches. I now wake up, feeling normal in the morning. Because the pills used to give me headaches, I thought I should drink them with Panado, and it worked for me. I can now sleep with my lady every day. P10Intv.*

The accounts of participants indicate that, despite many of them being referred to men's clinics for pharmacological intervention for erectile dysfunction, some still relied on their cultural practices, religious beliefs and personal convictions as coping mechanisms or for rehabilitating their erectile function. Various herbs from different cultures were used to treat male infertility and reproductive disorders. These herbs are also recommended for enhancing sexual desire, improving sexual performance, treating erectile dysfunction, promoting vasodilation and increasing testosterone levels (Chauhan et al., 2014, Chauhan et al., 2010; Li et al., 2017).

### 5.3.4 THEME 4: Facilitation of supportive care for men’s sexual health

Participants’ experiences reveal that oncology health professionals often overlook the provision of SCMSH during radiotherapy for prostate cancer. Some participants were too scared to ask questions about their concerns, as one stated,

*I never asked. I was always scared to ask. P02Intv.*

In contrast, others proactively asked about sexual function challenges and side effects during treatment. However, it was identified that dialogues between participants and oncology health professionals in radiation oncology to share information on the impact of prostate cancer treatment on men’s sexual health were not adequate across the board. Examples of supporting participants’ quotes on this theme are given below:

> *I wanted to ask him about … when I went home, I said to my wife, Hey, something is not right: like the hair; like everything down there – the penis was also shrinking. P02Intv.*
>
> *Yes. We had such a conversation here, but they told me to just drink the tablets, and then they will see if it will go up when I go back to Johannesburg in September. P08Intv.*
>
> *Even the ladies at radiation would just put me into the machine, after that I would go back the next day etc. It would be like that for the whole week. P02Intv.*
>
> *No, I have not spoken to the doctor about it. I thought that maybe they were waiting for me to heal. I will be coming again on the 28th of July. When I come, I will tell them that since I came from radiation, I no longer have power. P02Intv.*

According to the participants’ experiences, radiation oncologists attempted to offer SCMSH to patients before and during treatment, albeit with limited continuity. Participants with sexual function challenges after radiotherapy for prostate cancer were mostly referred to the men’s clinic to see urologists. The evidence is presented in the following excerpts:

> *She assured me not to worry, that it would improve. She also advised me to communicate with my partner about the issue, and I agreed. P08Intv.*

> *They told us how this thing will affect our sexuality. They tell you that the boy will never wake up like before. They also told women not to be surprised when such happens to their men for a certain time. P12Intv.*
>
> *Yes. That is why I had to go to the men's clinic where they tried to help me get it working again. I attended the sessions until I heard rumours that they might inject me. P07Intv.*

According to the participants, it seems that RTTs avoided addressing sexual health issues during interaction during radiotherapy for prostate cancer. Radiation therapists appeared to have focused mostly on explaining the radiotherapy process and providing patients with general information about the side effects of treatment. The following participants' quotes support these findings:

> *I used to chat with those guys a lot. They know me very well because I am quite talkative. They do talk and give advice about what to expect. They do not just give you treatment, they also explain to you. You see? P03Intv.*
>
> *No, we did not talk about such issues at the machine. P06Intv.*
>
> *The only person with whom I used to talk was radiation therapist X; I asked him how certain things work, and he explained to me that the treatment was helping to clean cancer. P02Intv.*

Where it is needed, sexual health care should be integral to PCC for patients in healthcare facilities (Papadopoulou et al., 2019; Ramlachan & Naidoo, 2024). According to Ramlachan and Naidoo (2024), initiating dialogue about sexual health requires health care professionals to create a safe and non-judgemental environment and utilising evidence-based screening tools. The uncertainty expressed by some participants about discussing their sexual health concerns with their oncology health professionals suggests that the radiation oncology setting may not have been conducive to open and comfortable discussions on this topic.

This study found that few interactions between participants and RTTs proactively addressed sexual health concerns. Nevertheless, a study by Flood et al., (2023) points out that RTTs are highly competent professionals and are well-equipped to manage radiotherapy side effects throughout the treatment stages. Similarly, van Beusekom et al., (2019), Hulley et al., (2016) and Mattarozzi et al., (2019) indicate that RTTs are good at communicating with patients during radiotherapy and offering information and emotional support, thereby building trust with patients, especially when patients experience anxiety and distress. This study encourages RTTs to actively participate in supportive care by counselling patients about radiotherapy side effects, including those related to sexual health. Integrating sexual health discussions into routine patient counselling could improve whole-person care for men receiving radiotherapy for prostate cancer in oncology settings.

#### *5.3.4.1 Subtheme 4a: Couple counselling support services*

It appeared that couple counselling was not standard practice for the radiation oncology setting where the study was conducted. The relationship and marital problems participants faced varied widely, with some people having supportive partners and others not. One of the participants took the initiative to invite his partner to the oncology clinic so that she could receive counselling about the prostate cancer and treatment side effects, particularly issues concerning sexual function, but others struggled.

> *No. I want to do so because my wife has been giving me a hard time in that situation. But I made her understand, because when I told doctors about my sexual problems, they said that I can be hard all the time, but I would be dead after six months. P08Intv.*
>
> *You see, what helped me is that before I started with the injection, I started with going with my wife to some class in Johannesburg where they came to explain what was happening. They were so impressed that many of us went with our wives. P12Intv.*
>
> *I still look young, and I still have a wife. It really is painful, my brother. P07Intv.*
>
> *Yes, she used to discuss with her friends that she cannot have sex with me anymore because my thing does not work anymore. P11Intv.*

The challenges shared by participants regarding their partners highlighted the need to include the partners' perspectives in the cancer care plan for men undergoing radiotherapy for prostate cancer, to ensure whole-person care in oncology settings. A study by Regan et al., (2012) demonstrates that couple-based interventions can significantly reduce distress and improve coping for cancer-affected couples. Sexual health counselling has the potential to enhance communication and mutual understanding and integrate these interventions into care for patients with prostate cancer, to alleviate intimate relationship stress, foster emotional intimacy and improve both sexual health and relationship satisfaction (Breitbart et al., 2021).

#### *5.3.4.2 Subtheme 4b: Challenges in men's sexual health supportive care*

Participants faced a challenge in receiving continuity in SCMSH at the radiation oncology clinic during follow-up visits. For example, participants reported being dissatisfied by having to repeatedly share or discuss their sexual health issues, each time with a different doctor, during each visit for a treatment review. Participants seemed more comfortable discussing their sexual health concerns with male oncology health professionals than with female oncology health professionals, highlighting a gender consideration in providing SCMSH. Additionally, the age difference between participants and oncology health professionals appeared to somewhat inhibit some participants from asking questions related to sexual health.

> *I used to chat with those guys a lot. They know me very well because I am quite talkative. They do talk and give advice about what to expect. They do not just give you treatment, they also explain to you. You see? P03Intv.*
>
> *I was worried and did not know whether I should talk to the doctor, so I kept quiet. P02Intv.*
>
> *No. I understand that people who operate these machines are not doctors; they are just workers who perform their daily functions according to the demands of the patients. So…. P10Intv.*
>
> *Sir, I am very sorry to tell you this – because the doctors do not talk to us at the hospital. You know very well, because they will tell us that they are busy, and they got no time to talk to us. P04Intv.*
>
> *I was here in November; when I come again on the 11th of next month, there will be a new doctor. That is why I do not follow their names anymore. I do not know why they do that. P11Intv.*
>
> *The thing about me is that I asked a lot of questions to people around here at radiation, even the doctors, until they gave me answers. I was never disappointed; they always gave me the answers that I wanted. So, I am happy about it. P04Intv.*

Participants’ stories reveal the challenges facing the provision of SCMSH in radiation oncology, including doctor rotations, busy clinics, inadequate information sharing, and personal factors that hinder consistent therapeutic relationships and whole-person care. Ahn and Kim (2020) and Miranda et al., (2024) highlight that cultural beliefs, lack of knowledge and discomfort about discussing sexual health are common barriers in oncology and other fields. Therefore, it is essential for oncology health professionals to undergo training in sexual health counselling. In this study, participants’ experiences with RTTs during radiotherapy for prostate cancer highlight the uncertainty about RTTs’ role in SCMSH, which reflects broader challenges (Mgopa et al., 2021).

## 5.4 SUMMARY

This chapter detailed the demographics, sample size and interview context and provided an overview of the data analysis method. Phase 1 findings comprise four main themes and seven supporting subthemes, which were illustrated with verbatim excerpts from interview transcripts and contextualised in the existing literature on the phenomenon under investigation. These findings provide insights into the provision of SCMSH in the identified oncology setting defined for this study. The next chapter will present the survey findings on RTTs’ perspectives on their involvement in facilitating SCMSH for patients receiving radiotherapy for prostate cancer.

# CHAPTER 6

# QUANTITATIVE FINDINGS (PHASE 2)

*Stories give life to data, and data give authority to stories.*

Wendy Newman

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## 6.1 INTRODUCTION

The findings of Phase 1, in the previous chapter, presented patients' experiences of how oncology health professionals provide sexual health support to patients receiving radiotherapy for prostate cancer in a radiation oncology setting. These findings formed the basis for the development of a survey instrument to gather the perspectives of RTTs on their role in facilitating SCMSH during radiotherapy for prostate cancer, which made the qualitative phase the dominant phase for the present study. The quantitative findings of Phase 2 are intended to build on the experiences of male patients, which had been gathered in Phase 1 by leveraging the perspectives of RTTs to facilitate SCMSH in radiation oncology settings. Thus, a QUAL → quan mixed methods notation was adopted to develop a model for facilitating SCMSH for patients receiving radiotherapy for prostate cancer, thereby integrating Phase 1 and Phase 2 findings of this exploratory sequential mixed methods study.

## 6.2 RESPONDENT DEMOGRAPHICS

The target population comprised 60 RTTs at two hospitals, with a sample target of 50 respondents. In total, 48 respondents (96%) completed and returned the questionnaires. The respondents' ages ranged from 20 to 57 years. The sample size for data analysis included 11 men, of whom 70% were between 25-29 years old, and 37 were women, 22.2% were between 20-24 years old, and 22% were between 35-39 years old. Among the RTTs who participated in the survey, Africans (29) presented the highest number, followed by Whites (13).

**Table 6.1: Composition and size of the research sample**

| Hospitals | n | % of total |
|---|---|---|
| Hospital A | 32 | 66.7 |
| Hospital B | 16 | 33.3 |
| Total | 48 | 100 |

As shown in Table 6.1, 66.7% (32) and 33.3% (16) of the respondents from hospitals A and B, respectively, completed and returned the questionnaire. However, data from the two hospitals were analysed and treated as a single sample because the respondents were selected through purposive sampling using the same eligibility criteria. The sample was considered to be homogeneous because all respondents were RTTs, despite them having different experiences with patients receiving radiotherapy for prostate cancer.

### 6.2.1 Gender and age distribution

Gender and age distribution are important for the current study. Gender and age differences between oncology health professionals and patients with cancer can be challenging when it comes to discussing sexual health issues affecting patients in clinical settings. Hence, I included these variables in the findings to provide an appropriate context for this study (see Table 6.2).

**Table 6.2: Age-gender distribution within the dataset**

| Age group | Female | | Male | |
|---|---|---|---|---|
| | n | % | n | % |
| 20–24 | 8 | 22.2 | 2 | 20.0 |
| 25–29 | 7 | 19.4 | 7 | 70.0 |
| 30–34 | 3 | 8.3 | 1 | 10.0 |
| 35–39 | 8 | 22.2 | 0 | 0 |
| 40–44 | 2 | 5.6 | 0 | 0 |
| 45–49 | 5 | 13.9 | 0 | 0 |
| 50–54 | 2 | 5.6 | 0 | 0 |
| 55–59 | 1 | 2.8 | 0 | 0 |
| Age not given | 1 | 2.7 | 1 | 2.7 |
| **Total** | 37 | 100 | 11 | 100 |

Of the 48 respondents, 77% (37) were female, and 22.9% (11) were male, as shown in Table 6.2. Of the female respondents, 22.2% (8) were aged 20–24 and 22.2% (8) were aged 35–39 years, and 2.8% (1) was 55–59 years old. In turn, the male respondents were primarily in the 25–29 years age group, with 70% (7) in this category. One male and one female participant (2.7% each) did not indicate their ages.

### 6.2.2 Racial group and home languages

In the questionnaire, respondents were presented with the racial group options of African, Indian, White, Asian, or Other, as well as a list of home language options. Table 6.3 presents the distribution of home languages for the different race groups in the research sample.

**Table 6.3: Home language distribution of the racial groups**

| Home language | African | | White | | Asian | | Indian | | Coloured | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | |
| Afrikaans | 0 | 0 | 10 | 76.9 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| isiNdebele | 1 | 3.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Setswana | 1 | 3.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| isiSwati | 1 | 3.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Tshivenda | 1 | 3.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Xitsonga | 1 | 3.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| English | 2 | 6.9 | 3 | 23.1 | 1 | 100 | 4 | 100 | 1 | 100 | 11 |
| Sepedi | 2 | 6.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Sesotho | 3 | 10.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| isiXhosa | 5 | 17.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| isiZulu | 12 | 41.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| **Total** | 29 | 100 | 13 | 100 | 1 | 100 | 4 | 100 | 1 | 100 | 48 |

The African respondents indicated various languages as their home language, with 41.4% (12) indicating isiZulu, and 3.4% (1) indicating Xitsonga and Tshivenda. In contrast, the languages used by White, Asian, Indian, and Coloured respondents is more uniform, predominantly centred around Afrikaans and English. In total 8.3% (4) of respondents identified as Indian, and 2.1% (1) each were Asian and Coloured. Table 6.3 shows that, of the respondents who chose the White racial group, 23.1% (3) indicated English as their home language, and 76.9% (10) Afrikaans.

### 6.2.3 Years of work experience and job position

In South Africa, the job positions of RTTs are classified as junior, senior, and chief to organise staff within oncology departments based on experience and promotion. Table 6.4 illustrates the distribution of years of work experience among respondents within the sample, categorised by their respective job positions. The years of work experience are grouped into intervals of four years, ranging from 0 to 30 years.

**Table 6.4: Years of work experience and job position**

| **Years of experience** | **Junior radiation therapist** | | **Senior radiation therapist** | | **Chief radiation therapist** | |
|---|---|---|---|---|---|---|
| | n | % | n | % | n | % |
| 0–5 years | 24 | 100 | 0 | 0 | 0 | 0 |
| 6–10 years | 0 | 0 | 6 | 37.5 | 0 | 0 |
| 11–15 years | 0 | 0 | 7 | 43.8 | 1 | 12.5 |
| 16–20 years | 0 | 0 | 2 | 12.5 | 3 | 37.5 |
| 21–25 years | 0 | 0 | 1 | 6.3 | 2 | 25.0 |
| 26–30 years | 0 | 0 | 0 | 0 | 1 | 12.5 |
| More than 30 years | 0 | 0 | 0 | 0 | 1 | 12.5 |
| **Total** | 24 | 100 | 16 | 100 | 8 | 100 |

Table 6.4 illustrates the work experience distribution within junior, senior and chief RTTs categories. All respondents with up to 5 years of experience were employed in junior positions, accounting for half of the entire sample (24). Senior RTTs mostly had 6–15 years, with 37.5% (6) in the 6–10 years range and 43.8% (7) in the 11–15 years range. Chief RTTs showed a broader range of experience, with 37.5% (3) having 16–20 years and 12.5% (1) having 26–30 years and more than 30 years of experience.

### 6.2.4 Qualifications of respondents

According to the Higher Education Qualification Sub-Framework in South Africa pre-2009, the National Diploma (NDip) was at National Qualifications Framework (NQF) Level 6, Baccalaureus Technologiae (BTech) degree at NQF Level 7, Magister Technologiae (MTech) degree at NQF Level 8, and Doctor Technologiae (DTech) degree at NQF Level 9. Post-2009, the Higher Education Qualification Sub-Framework expanded the NQF levels from 8 to 10, with qualifications ranging from higher certificates at NQF Level 5 to doctoral degrees at NQF Level 10 (Council on Higher Education, 2013; Department of Higher Education and Training, 2020). The BTech qualification was a one-year full-time or two-year part-time programme for students who have completed a three-year NDip programme at universities of technology. The Bachelor Honours degree (NQF Level 8) is a postgraduate specialisation qualification that usually follows a Bachelor degree at NQF Level 7. Figure 6.1 shows the qualification names and the distribution of the highest qualifications reported by respondents.

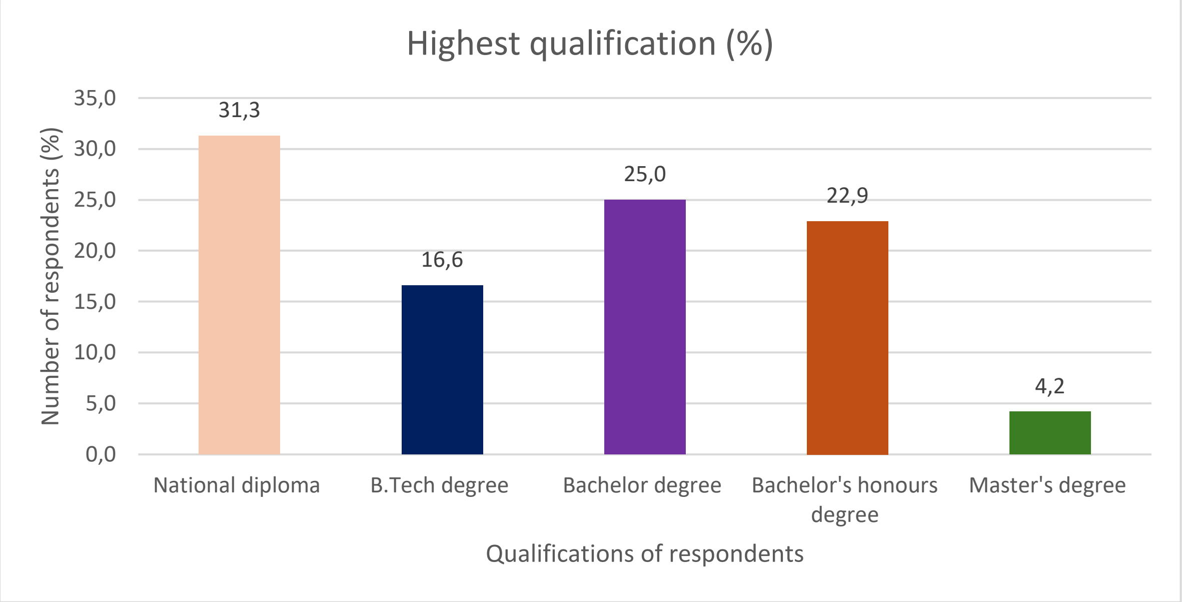


**Figure 6.1: Highest qualifications of respondents**

Figure 6.1 shows that most respondents, approximately one-third, 31.3% (15), held National Diplomas. This was followed by those with B.Tech degrees 16.6% (8), Bachelor's degrees 25% (12), and Bachelor's Honours degrees 22.9% (11) in Radiation Therapy. Respondents with Master's degrees represented a small proportion, accounting for only 4.2%(2).

### 6.2.5 Affiliated universities for undergraduate radiation therapy studies

It was essential to gather information about the universities that had awarded undergraduate qualifications to respondents. Different radiography departments may employ different approaches to teaching and training, particularly regarding the inclusion of sexual health topics in their curricula.

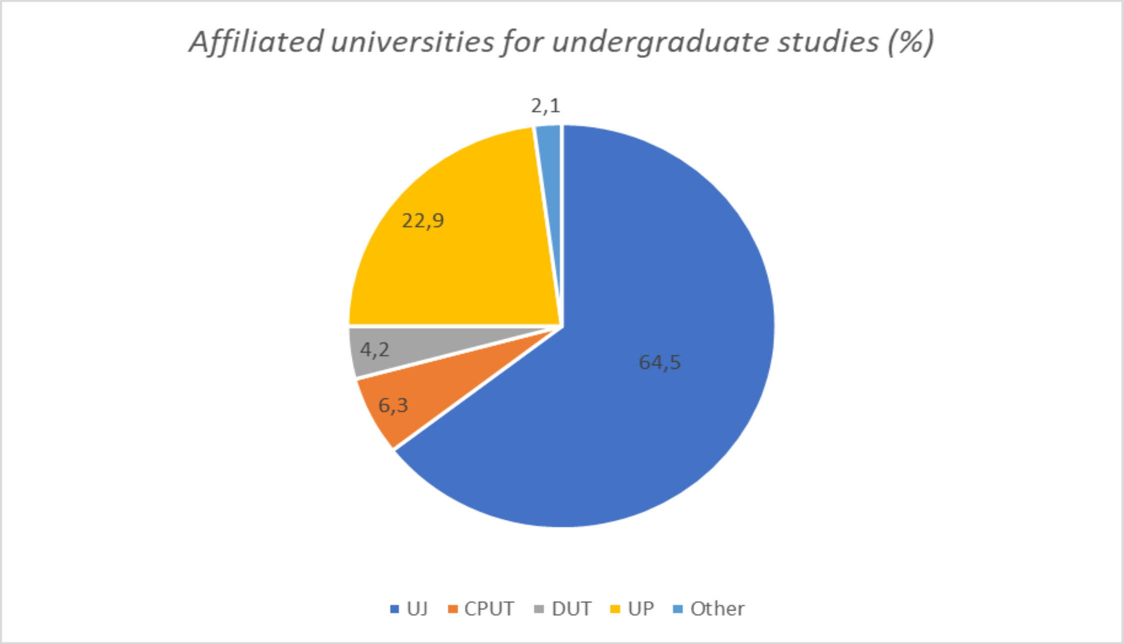


Figure 6.2: Affiliated universities for undergraduate radiation therapy studies

Figure 6.2 shows that nearly two-thirds of respondents, 64.5% (31), had completed their undergraduate studies at the University of Johannesburg, while 22.9% (11) earned their degrees from the University of Pretoria. In addition to the four universities mentioned in the survey (University of Johannesburg, Cape Peninsula University of Technology, and University of Pretoria), 2.1% (1) of respondents had earned a Bachelor's degree from universities that were not identified.

## 6.3 DESCRIPTIVE ANALYSIS OF SEXUAL HEALTH CONSTRUCTS

This section presents a descriptive analysis of constructs relevant to the phenomenon of sexual health under study. The aim was to identify trends in the data sets and relationships between variables, for example, the likelihood that male patients would initiate dialogue about sexual health compared to the rate at which they reported their sexual health issues to RTTs during radiotherapy for prostate cancer.

### 6.3.1 Status of inclusion of sexual health topic in the university curricula

The necessity of including sexual health topics in the curricula of universities that offered radiation therapy programmes was emphasised in my Master’s research project, which laid the groundwork for this study; hence, this variable was included in the questionnaire. Oncology health professionals often face challenges when they discuss sexual health with patients in clinical settings, which highlights the importance of adequate education and training in this area.

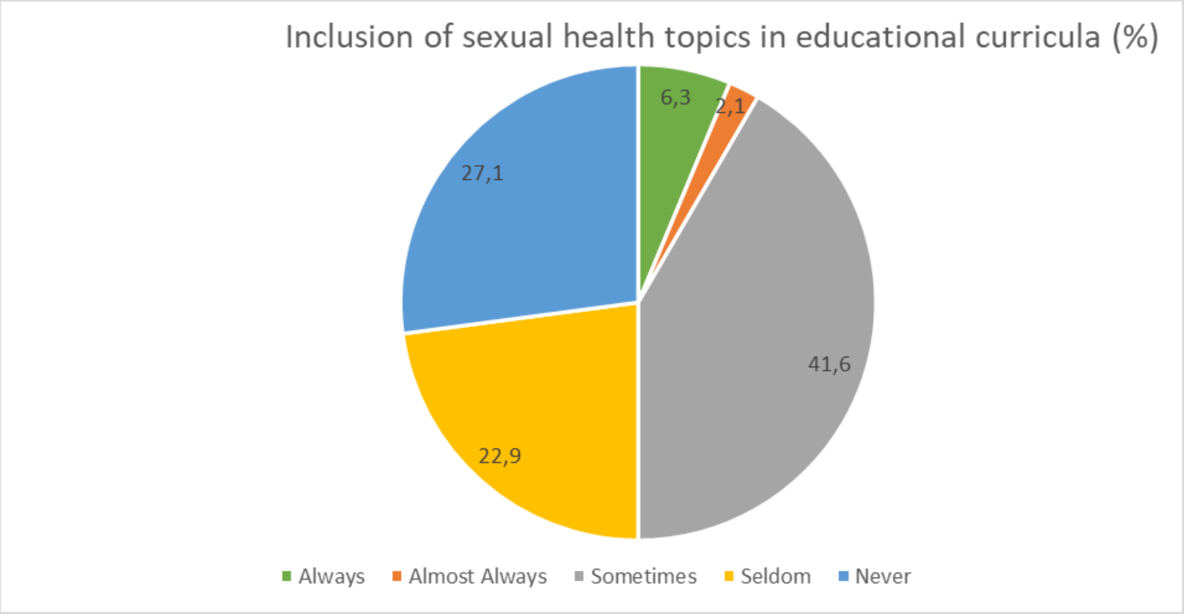
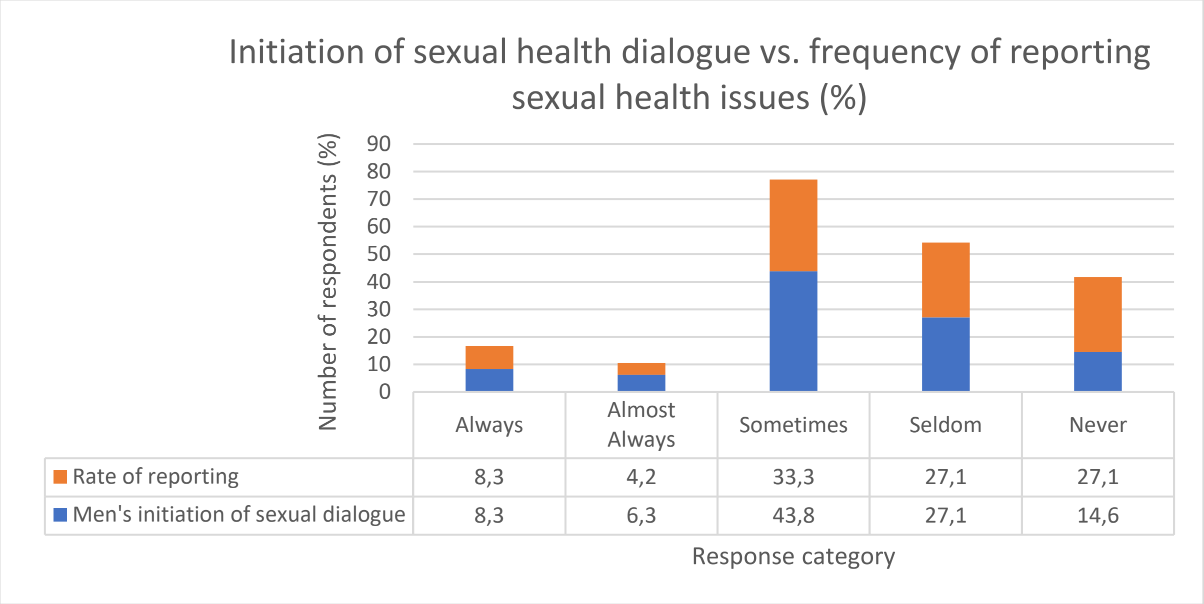


**Figure 6.3: Inclusion of sexual health topics in radiation therapy curricula**

Figure 6.3 shows that 41.6% (20) of respondents indicated that sexual health topics were sometimes included in radiation therapy curricula, while 27.1% (13) reported it was never covered. Only 2.1% (1) stated it was almost always included, and 6.3% (3) said it was always included. Surprisingly, there is an even 50/50 split between the percentages of poor coverage (seldom [22.9%] and never [27.1%]) and some coverage (sometimes [41.6%], almost always [2.1%] and always [6.3%]).

### 6.3.2 Likelihood of male patients initiating sexual health dialogue versus the rate of reporting sexual health issues

Phase 1 findings indicate that men undergoing radiotherapy for prostate cancer reported that they were generally willing to discuss sexual health issues with oncology health professionals, though some lacked confidence to do so. To explore this topic, Question B2 (Annexure 9) assessed the likelihood of patients initiating conversations about sexual health with RTTs, while Question B3 examined how often patients reported these issues. Figure 6.4 presents descriptive statistics that compare the likelihood of patients initiating dialogue with the frequency of patients reporting sexual health problems.



| | Always | Almost Always | Sometimes | Seldom | Never |
|---|---|---|---|---|---|
| 🟧 Rate of reporting | 8,3 | 4,2 | 33,3 | 27,1 | 27,1 |
| 🟦 Men's initiation of sexual dialogue | 8,3 | 6,3 | 43,8 | 27,1 | 14,6 |

**Figure 6.4: Likelihood of male patients initiating a dialogue about sexual health versus frequency of reporting sexual health issues**

Figure 6.4 shows that 43.8% (21) of respondents reported that male patients sometimes initiated conversations about sexual health topics, while 14.6% (7) reported that male patients never did so, while 8.3% reported that male patients always initiated such conversations. Additionally, a third of respondents (33.3%,16) stated that patients sometimes reported sexual health problems to RTTs, while 27.1% (13) said male patients never did, and 8.3% (4) indicated that male patients always did.

### 6.3.3 The extent to which radiation therapists are asked questions relating to sexual health

The graph in Figure 6.3 provides descriptive statistics on the response rate of respondents to questions on sexual health raised by male patients during radiotherapy for prostate cancer. Furthermore, the respondents were given the opportunity to motivate their responses by providing textual narratives in the questionnaire.

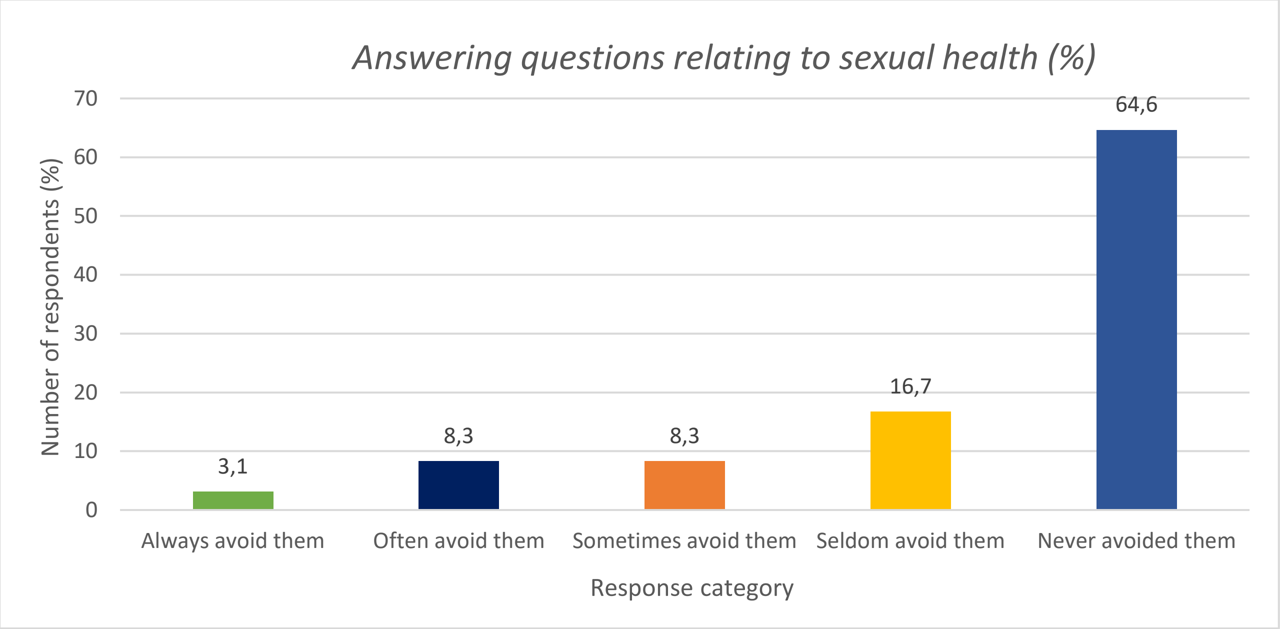


**Figure 6.5: Degree to which radiation therapists answered questions on sexual health**

Figure 6.5 shows that nearly two-thirds of respondents (64.6%) (31) reported never avoiding patients' questions about sexual health during radiotherapy. Conversely, 8.3% (4) of respondents admitted to sometimes and often avoiding these questions, while 3.1% (1) always avoided addressing sexual health concerns. To contextualise these quantitative findings further, respondents provided explanations through responses to open-ended questions. The analysis and quantification of these responses are presented in Section 6.3.3.1, offering deeper insights into the factors shaping respondents' attitudes and behaviours regarding sexual health discussions.

#### *6.3.3.1 Justification of respondents on the way they dealt with questions relating to sexual health*

Table 6.5 provides a quantitative summary of respondents' narrative responses, which categorises similar themes to explain the percentage scores illustrated in Figure 6.5. Reasons with the same underlying idea were grouped and presented as actual numbers and percentages.

**Table 6.5: Reasons why respondents never avoided answering questions related to sexual health**

| Category of reasons | n | % |
|---|---|---|
| RTTs make every effort to offer helpful advice | 16 | 35.6 |
| The age difference appears to be an obstacle | 3 | 6.7 |
| The opposite gender appears to be an obstacle | 3 | 6.7 |
| A feeling of unease and caution about initiating sex talk | 3 | 6.7 |
| Always refer patients to the doctor | 10 | 22.2 |
| It is RTTs' responsibility to assist patients | 6 | 13.3 |
| Patients have the right to information | 2 | 4.4 |
| Patients do not disclose sexual health problems | 2 | 4.4 |
| **Total** | 45 | 100 |

Table 6.5 demonstrates that respondents made efforts to offer sexual health advice to patients, as evidenced by the emergence of this category in 35.6% of their text responses. It was found that, in 22.2% (10) of excerpts, respondents avoided answering sexual health-related questions and always referred patients to the doctor. In 13.3% (6) of the responses, respondents indicated that RTTs play a role in counselling patients with sexual health problems rather than simply referring them to a doctor. In 6.7% (3) of the responses, it was suggested that age and gender differences between the respondents and male patients seem to be obstacles that hindered dialogues about sexual health being initiated with these patients.

### 6.3.4 Frequency of occurrence of respondents having sexual health dialogue with patients

The other essential aspect of this survey study was to assess the inclusion of sexual health support in the care provided by oncology health professionals, particularly RTTs, for patients with prostate cancer. This assessment was supported by the central argument of this study, which posits that RTTs are well positioned to provide emotional support and discuss sensitive topics such as sexual function and intimacy with patients who are undergoing radiotherapy for cancer (see Section 1.1).

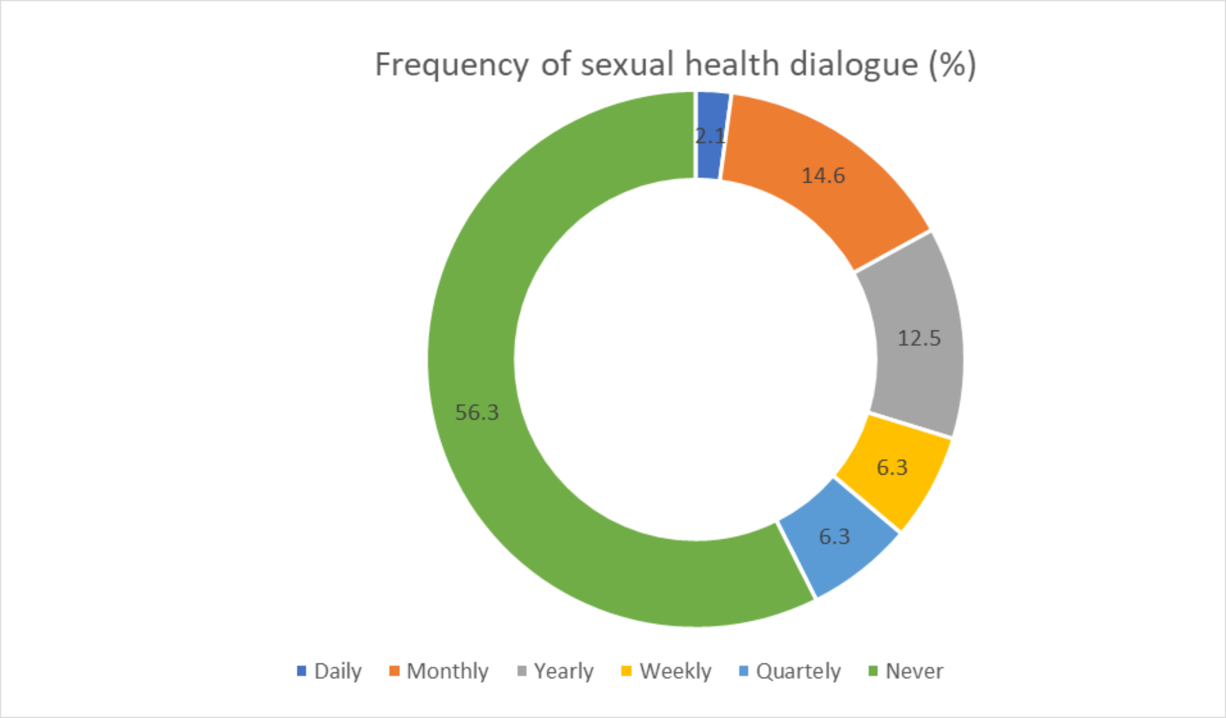


**Figure 6.6: Frequency of occurrence of sexual health dialogue between radiation therapists and patients**

Figure 6.6 reveals that 56.3% (27) of respondents reported never discussing sexual health with male patients during radiotherapy for prostate cancer. Only 12.5% (6) had conversations on this topic with male patients once a year, and 14.6% (6) did so monthly. These findings underscore the rarity of sexual health discussions between RTTs and patients.

#### *6.3.4.1 Explanations for the infrequent occurrence of sexual health dialogue*

A content analysis of the written responses was conducted to better understand the reasons for the low frequency of sexual health dialogue between respondents and patients. Table 6.6 presents the categories of reasons for respondents' behind the low frequency of sexual health dialogue between respondents and male patients. This combination of qualitative and quantitative data enhances understanding of the underlying factors contributing to the observed patterns shown in Figure 6.6.

**Table 6.6: Reasons for a rare occurrence of sexual health dialogue in oncology**

| **Category of reasons** | **n** | **%** |
|---|---|---|
| Barriers to sexual health communication | 8 | 16.6 |
| My job involves treatment planning and administration | 3 | 6.3 |
| Patients feel uncomfortable talking about sexual health | 9 | 18.8 |
| RTTs are not confident about starting the sexual health talk | 14 | 29.1 |
| RTTs do not get involved in patient counselling | 5 | 10.4 |
| RTTs often refer patients to the doctor | 5 | 10.4 |
| RTTs' counselling focuses on the acute radiation effects | 2 | 4.2 |
| RTTs lack training in sexual health facilitation | 2 | 4.2 |
| **Total** | 48 | 100 |

It is clear in Table 6.6 that 29.1% (14) of the respondents' text responses indicate a lack of confidence about initiating conversations about sexual health issues with male patients. Barriers to sexual health communication were raised by 16.6% (8) of the respondents, and 18.8% (9) of respondents indicated that patients feel uncomfortable talking about sexual health issues. Two respondents (4.2%) described ideas related to the following themes: (a) radiotherapy counselling focused on the acute effects of radiation, and (b) RTTs lacked training in sexual health facilitation.

### 6.3.5 Influence of gender, religion and culture on sexual health dialogue

Questions B7, B8, and B9 (see Annexure 9) in the questionnaire explored factors that affected the facilitation of sexual health discussions between patients and respondents. These questions sought to gauge the level of agreement among respondents regarding the influence of gender, religion and culture on their approach to discussing sexual health topics. Table 6.7 summarises the statistics of the respondents' responses, to provide insight into the influence of these factors on the subject under study.

**Table 6.7: Gender, religious and cultural influences on a sexual health topic**

| Questions | Strongly dis-agree % | Disagree % | Neither agree nor disagree % | Agree % | Strongly agree % | Number of respondents |
|---|---|---|---|---|---|---|
| Gender influences how an oncology health professional approaches sexual health (B7) | 6.3 | 8.3 | 14.6 | 39.6 | 31.3 | 48 |
| Religion influences how an oncology health professional approaches sexual health (B8) | 16.7 | 6,3 | 29.2 | 31.3 | 16.7 | 48 |
| Culture influences how an oncology health professional approaches sexual health (B9) | 14.6 | 4.2 | 33.3 | 27.1 | 20.8 | 48 |

Table 6.7 shows that 39.6% (19) of respondents agreed and 31.3% (15) strongly agreed that gender influences how oncology health professionals address sexual health during counselling, while 8.3% (4) disagreed and 6.3% (3) strongly disagreed. Additionally, 31.3% (15) agreed and 16.7% (8) strongly agreed that religion affects the oncology health professionals' approach, with 29.2% (14) neutral, 6.3% (3) disagreeing, and 16.7% (8) strongly disagreeing. For cultural influence, 33.3% (16) were neutral, 14.6% (7) strongly disagreed, and 20.8% (10) strongly agreed that culture influences oncology health professionals' approach to sexual health.

#### *6.3.5.1 Analysis of the social factors that influence conversations about sexual health*

The questionnaire included open-ended follow-up questions (B7.1, B8.1, B9.1) to gather detailed perspectives from respondents. These free-text responses were used to link the numeric analysis in Table 6.8 with the experiences of respondents. Responses were analysed, quantified and categorised in Table 6.8 to show their occurrence in the data.

## Table 6.8: Social factors that influence conversations about sexual health

| Category | n | % |
|---|---|---|
| **Gender-oriented category** | | |
| Gender should not play a role in overall patient care | 5 | 10.0 |
| It depends on multivariate factors, not gender alone | 5 | 10.0 |
| Male patients and male staff can easily talk about sexual health | 21 | 42.0 |
| You must be aware of patient preferences | 5 | 10.0 |
| Caution must be exercised as some men may take offence | 2 | 4.0 |
| The opposite sex is a barrier to sexual health conversations | 9 | 18.0 |
| RTTs must be professional regardless of a patient's gender | 3 | 6.0 |
| **Total** | 50 | 100 |
| **Religion-oriented category** | | |
| Professionals should be free of religious influences | 5 | 15.2 |
| Show respect and compassion for the beliefs of others | 3 | 9.1 |
| Religions have diverse perceptions of sexual health issues | 8 | 24.2 |
| Many religions do not support open sexual health discourse | 4 | 12.1 |
| Religion influences sexual health topics | 4 | 12.1 |
| Religion plays no role in sexual health talk | 2 | 6.1 |
| Some religions are cautious about sexual health matters | 7 | 21.2 |
| **Total** | 33 | 100 |
| **Culture-oriented category** | | |
| Africans are taught to respect and not question elders | 5 | 17.2 |
| Being professional promotes mutual actions | 3 | 10.3 |
| It depends on your cultural values and norms | 5 | 17.2 |
| Culture has no impact and is irrelevant to the subject | 6 | 20.7 |
| It is awkward to initiate the topic with elders and vice versa | 3 | 10.3 |
| Be sensitive to people's cultural diversity | 3 | 10.3 |
| Talking about sex is taboo among Africans | 4 | 13.8 |
| **Total** | 29 | 100 |

Regarding the gender category, 42.0% (21) of the respondents indicated that male patients found it easy to discuss sexual health issues with male staff. However, 4.0% (2) of the respondents highlighted the need for caution, as some men may be offended when asked to talk about their sexual health. In relation to religion-oriented responses, 24.2% (8) of respondents indicated that they believed different religions have different perceptions regarding sexual health issues, while only 6.1% (2) of respondents were of the view that religion plays no role in these discussions. Additionally, 20.7% (6) of respondents indicated that culture has no influence and is irrelevant to sexual health issues. Textual responses about culture accounted for 10.3% (3) of the responses and included the following points: (i) professionalism promotes mutual actions; (ii) initiating sexual health dialogue with elders can be awkward; and (iii) there is a need for sensitivity about human cultural diversity.

### 6.3.6 Appropriate timeframe to have sexual health dialogue with patients

Part of this survey was intended to assess and gain an understanding of the optimal timing for RTTs to initiate a dialogue about sexual health with patients undergoing treatment in oncology settings (see Table 6.9). Therefore, it was essential to determine the specific period during which male patients feel more at ease in engaging in conversations about sexual health concerns during radiotherapy, since it is not easy to talk about this.

**Table 6.9: Timing for initiating sexual health dialogue with male patients**

| Questions | Before starting radiotherapy % | After completing radiotherapy % | During and after radiotherapy % | During radiotherapy % | Before, during and after radiotherapy % | At no time % | Number of respondents |
|---|---|---|---|---|---|---|---|
| At what stage are male patients comfortable to have sexual health conversations with RTTs? | 14.6 | 16.7 | 12.5 | 20.8 | 22.9 | 12.5 | 48 |
| What time is appropriate for RTTs to have sexual health dialogue with male patients? | 52.1 | 4.2 | 8.3 | 29.2 | 33.3 | 2.1 | 48 |

Table 6.9 reveals that 22.9% (11) of respondents reported that male patients were comfortable discussing sexual health issues with RTTs throughout radiotherapy. Additionally, 14.6% (7) noted that patients were most comfortable having such discussions before starting radiotherapy, and 12.5% (6) reported that patients were

comfortable having these discussions during and after radiotherapy. More than half the respondents (52.1%; 25) believed that sexual health dialogue should occur before radiotherapy, and 33.3% (16) emphasised the importance of ongoing discussions before, during and after the radiotherapy treatment. Only 2.1% (1) believed that RTTs should never discuss sexual health matters with male patients. Table 6.10 presents the quantified narrative responses of respondents who provided inputs to support the findings in Table 6.9.

**Table 6.10: Appropriate timing of sexual health dialogue during radiotherapy**

| **Category of responses** | **n** | **%** |
|---|---|---|
| Provide ongoing patient counselling on men's sexual health | 5 | 13.9 |
| It is essential to establish patient–radiation therapist trust first | 3 | 8.3 |
| Give patients comprehensive counselling before treatment | 11 | 30.6 |
| Some patients wait until treatment is over to start a conversation | 2 | 5.6 |
| Prepare and reassure patients during and after treatment | 15 | 41.7 |
| **Total** | 36 | 100 |

As shown in Table 6.10, 41.7% (15) of respondents indicated that comprehensive counselling should be provided to cancer patients before treatment starts. Furthermore, 13.9% (5) stressed the importance of ongoing counselling on male sexual health, with a focus on the need to prepare and reassure patients about the side effects of potential treatment. In contrast, 5.6% (2) of respondents observed that some patients only discussed sexual health issues at the end of treatment. Additionally, 8.3% (3) of respondents believed that establishing trust between the patient and radiation therapist is crucial before discussions on sexual health is initiated with male patients.

### 6.3.7 Oncology staff eligible to facilitate sexual health dialogue

According to the qualitative Phase 1 findings, men treated for prostate cancer were unsure which oncology health professionals should address their sexual health concerns. As a result, respondents were asked to identify which oncology health professionals they believed should handle the sexual health issues of patients undergoing radiotherapy for prostate cancer. The options included oncology health professionals listed in Table 6.11 and others. Respondents had the option to select more than one oncology health professional they deemed appropriate to facilitate conversations about sexual health with these patients.

**Table 6.11: Oncology staff eligible to facilitate sexual health dialogue**

| Oncology staff | n | % of cases |
|---|---|---|
| Radiation oncologist | 41 | 28.3 |
| Radiation therapist | 32 | 22.1 |
| Oncology nurse | 27 | 18.6 |
| Clinical psychologist | 27 | 18.6 |
| Social worker | 18 | 12.4 |
| Total | 145 | 100 |
| | If other, please specify | |
| Not applicable | 46 | 95.8 |
| Total | 48 | 100 |

Table 6.11 shows that 28.3% (41) of respondents identified radiation oncologists as the most appropriate oncology health professionals to facilitate sexual health discussions with prostate cancer patients, followed by RTTs at 22.1% (32). Additionally, 18.6% (27) considered oncology nurses and clinical psychologists suitable for this role. However, a contradictory finding emerged, with 95.8% (46) of respondents selecting “not applicable”, though it was unclear whether this referred to RTTs or all selected oncology health professionals.

### 6.3.8 Degree to which radiation therapists avoid discussing patients’ sexual health issues

It is essential to build consensus among RTTs regarding their involvement in sexual health facilitation by creatively asking similar questions in various ways. For example, for Question B13, respondents were required to show a level of agreement or disagreement with the following statement: The RTTs often avoid addressing sexual health issues in patients with prostate cancer. A 1–5 Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree) was used to rate the respondents’ level of agreement or disagreement.

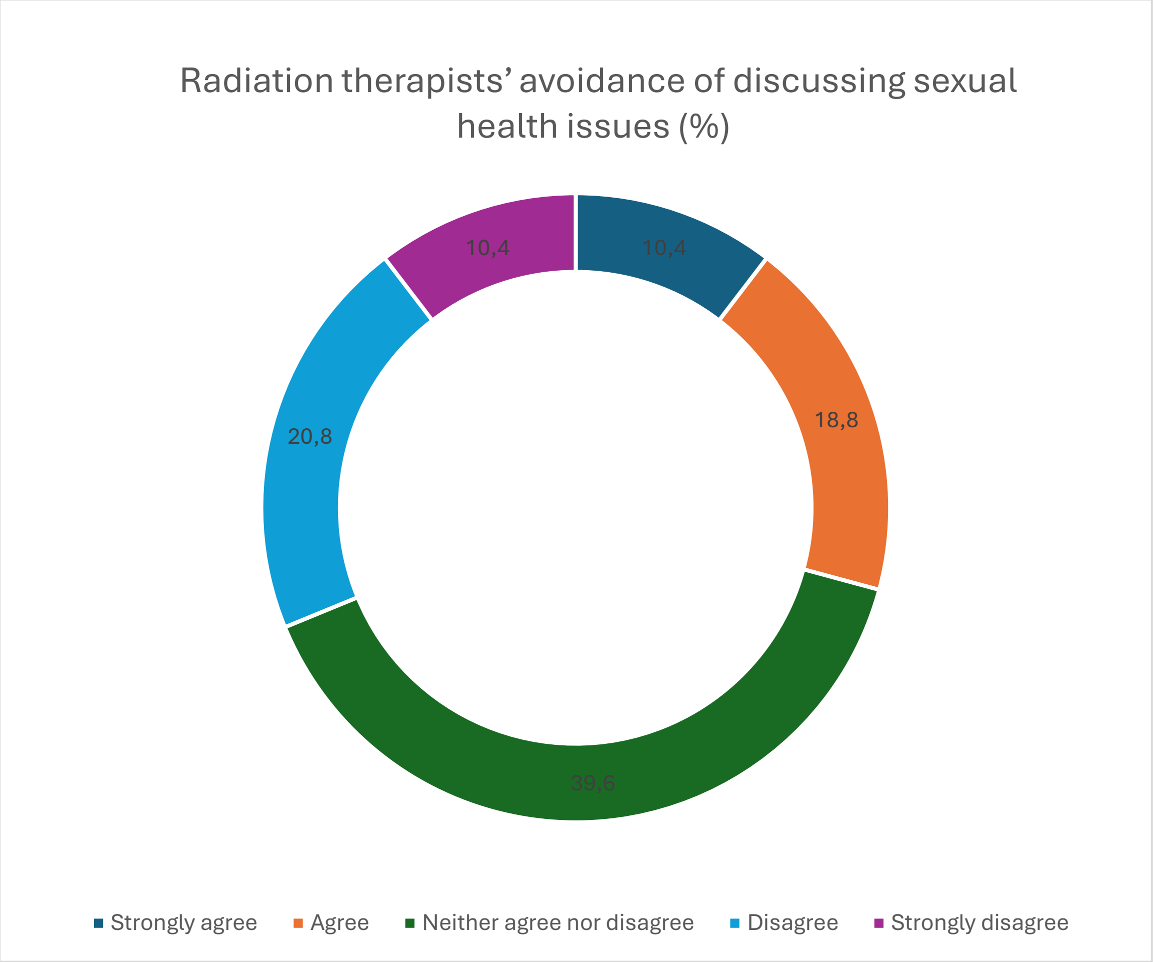


**Figure 6.7: Radiation therapists often avoid discussing sexual health issues**

Figure 6.7 indicates that 39.6% of respondents neither agreed nor disagreed with the following statement: Radiation therapists often avoid discussing sexual health issues with patients with prostate cancer. In contrast, 10.4% strongly agreed, 10.4% strongly disagreed and 20.8% disagreed with the statement. Respondents were also asked to provide written explanations to clarify their views, which were then analysed, categorised according to similar themes, and quantified, as shown in Table 6.12.

**Table 6.12: Barriers to sexual health dialogue according to radiation therapists**

| Category of feedback | n | % |
|---|---|---|
| Religious, cultural, gender and age-related limitations | 8 | 16.7 |
| It is beyond the scope of practice | 9 | 20.5 |
| General discomfort of staff and patients | 10 | 22.7 |
| Discomfort of female RTTs | 3 | 6.8 |
| It is the job of doctors and nurses to do the counselling | 6 | 6.8 |

| | | |
|---|---|---|
| Scared of being accused of sexual harassment | 2 | 4.2 |
| RTTs strive to address patient inquiries and concerns | 5 | 11.4 |
| Lack of sexual health counselling skills and knowledge | 7 | 15.9 |
| **Total** | **44** | **100** |

Table 6.12 shows that 22.7% (10) of the respondents indicated that RTTs avoid discussing sexual health issues with patients with prostate cancer because both they and patients generally felt uncomfortable discussing the topic. Nonetheless, only 4.2% (2) of the respondents were afraid of being accused of sexual harassment. Further statistical analysis of the relationship between avoidance of discussing sexual health and gender is presented in Section 6.6.4

## 6.4 AWARENESS OF SEXUAL HEALTH COUNSELLING SERVICES

Respondents' awareness of sexual health counselling services at a hospital was assessed using a Likert scale ranging from 1 to 5 (1 = not at all aware and 5 = extremely aware). Moreover, a trichotomised scale was recreated to simplify data interpretation by grouping the lower end of the scale (1 and 2) and the higher end (4 and 5) into two categories. The resulting scale had three categories: 1 = not aware, 2 = moderately aware and 3 – aware, which is illustrated in Figure 6.8.

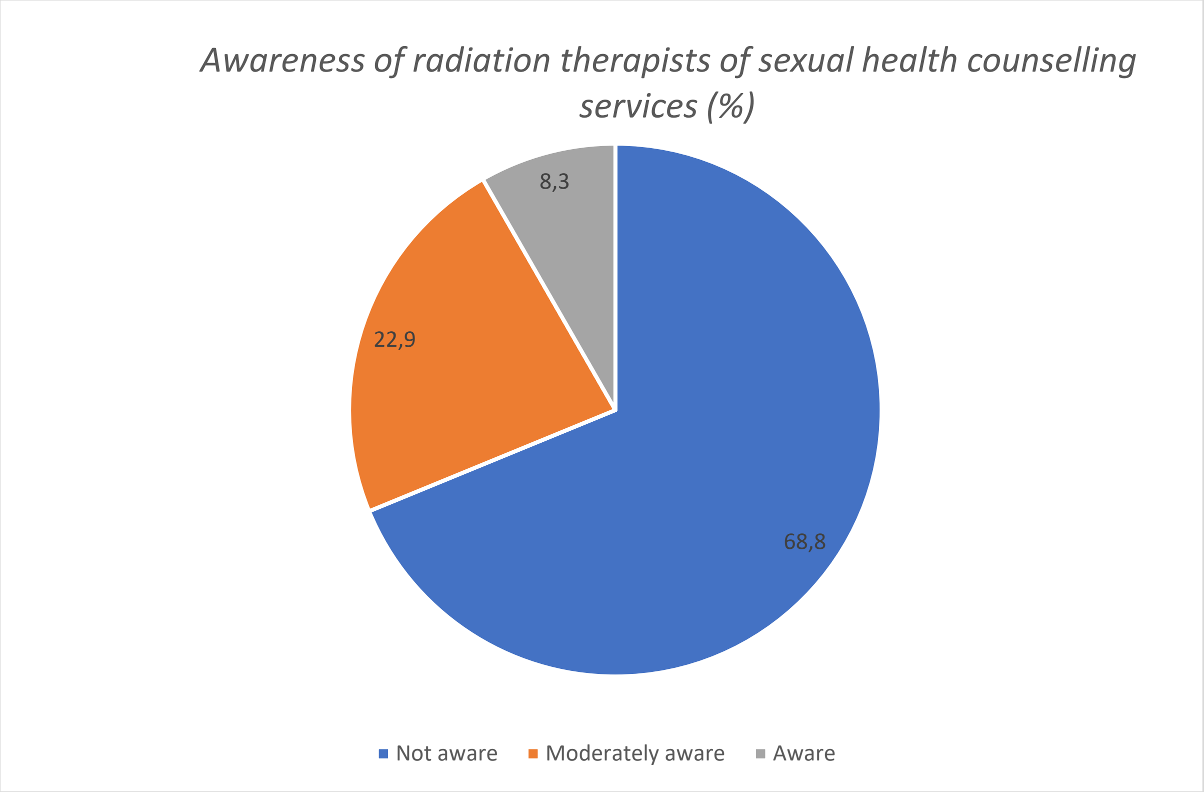


**Figure 6.8: Awareness of radiation therapists of sexual health counselling services**

The majority of respondents, 68.8% (33), reported not being aware of the sexual health counselling services available to male patients at the hospital. The grey slice of the pie chart indicates that 8.3% (4) of respondents were aware of these services, while 22.9% (11) indicated they were moderately aware. This pattern of responses suggests that many respondents were uncertain about the availability of sexual health counselling services for male patients at the hospital.

## 6.5 ROLE OF RADIATION THERAPISTS IN SEXUAL HEALTH COUNSELLING

The findings in Table 6.13 show responses to statements in the questionnaire (Questions C15, C16, and C17). Respondents reflected on their role in patient counselling and shared their opinions on including sexual health topics when they interacted with patients.

**Table 6.13: Radiation therapists' opinions on facilitating men's sexual health**

| Self-assessment tailored for patient counselling | Strongly disagree % | Disagree % | Neither agree nor disagree | Agree % | Strongly agree % | Number of respondents |
|---|---|---|---|---|---|---|
| I am adequately prepared to initiate sexual health conversations with patients with prostate cancer (C15) | 8.3 | 18.8 | 31.3 | 25.0 | 16.7 | 48 |
| RTTs can build good relationships with patients with prostate cancer, giving patients the freedom to talk to them about everything (C16) | 0.0 | 0.0 | 8.3 | 39.6 | 52.1 | 48 |
| RTTs are frontline workers who should advise patients with prostate cancer about any acute treatment responses (C17) | 6.3 | 6.3 | 2.1 | 43.8 | 41.7 | 48 |

Table 6.13 shows that 31.3% (15) of respondents were neutral about being prepared to discuss sexual health with patients receiving radiotherapy for prostate cancer, while 16.7% (8) strongly agreed and 8.3% (4) disagreed that they were adequately prepared. More than half (52.1%,25) agreed that RTTs could build good relationships with prostate cancer patients for open conversations, and none disagreeing. Additionally, no respondents disagreed that RTTs could build good relationships with male patients by giving patients the freedom to talk to them about everything. In response to Question C17, 43.8% (21) of respondents agreed that RTTs should inform patients receiving radiotherapy for prostate cancer about acute radiotherapy side effects, with only 2.1% (1) disagreeing and 6.3% (3) strongly disagreeing that they should inform patients.

### 6.5.1 Degree to which radiation therapists prioritise sexual health during patient counselling

Figure 6.9 presents the survey findings on whether RTTs prioritise sexual health while counselling patients treated for prostate cancer. Data were collected with six options to indicate the degree to which respondents considered sexual health issues during patient counselling. The respondents' consideration levels were measured using a

Likert scale ranging from 1 to 6, with 1 indicating that talking about radiation effects on sexual health during patient counselling was essential, and 6 indicating it was assigned a low priority.

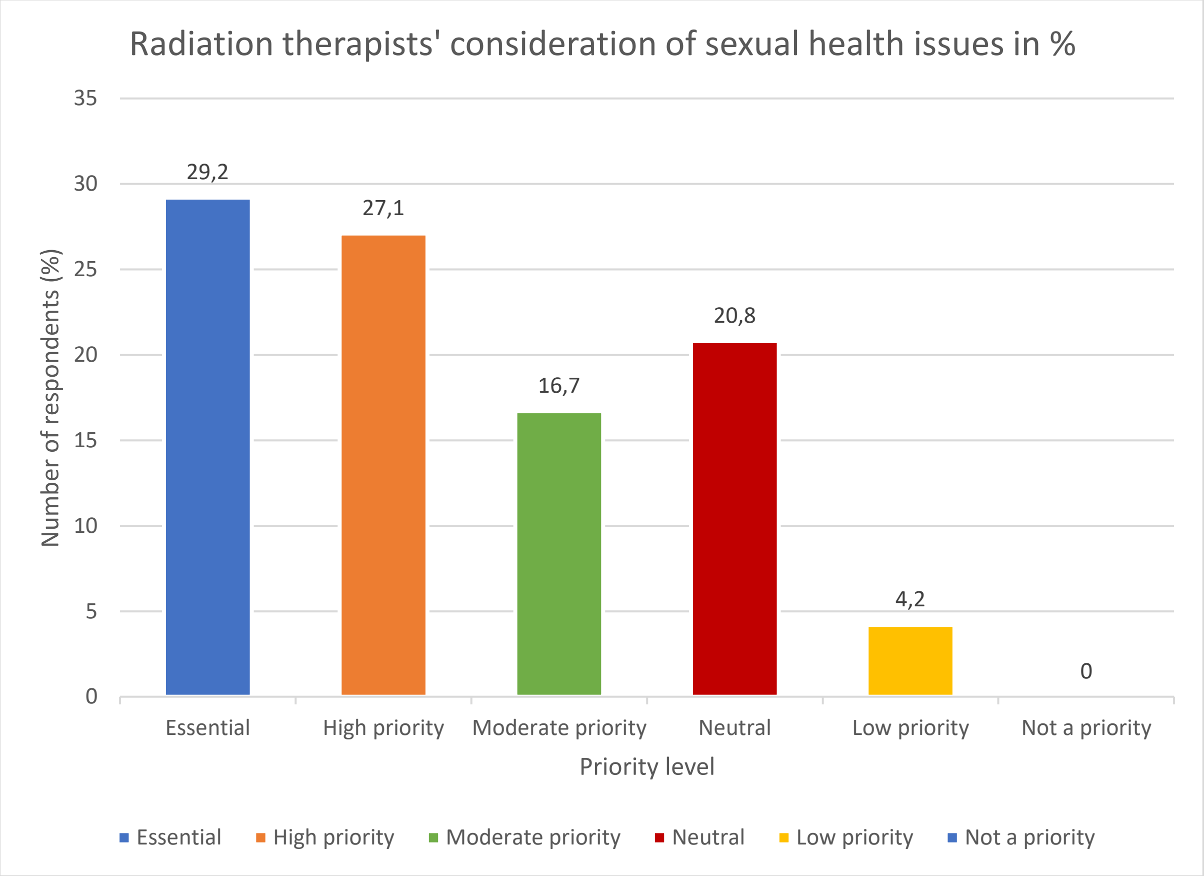


**Figure 6.9: Degree to which radiation therapists prioritise sexual health counselling**

Figure 6.9 shows that 29.2% (14) of respondents considered that it was essential to discuss sexual health essential during patient counselling; 27.1% (13) viewed it as a high priority; 4.2% (2) considered it a low priority, and none considered it unimportant. Additionally, 20.8% (10) of respondents were neutral on the matter. These statistics are supported further by narrative responses, which are categorised in Table 6.14.

**Table 6.14: Radiation therapists’ opinions on prioritising sexual health counselling**

| Category of reasons | n | % |
|---|---|---|
| Education and training are prerequisites | 4 | 10.3 |
| Sexual health counselling is the doctor’s duty | 7 | 17.9 |

| | | |
|---|---|---|
| Inform patients of treatment side effects before treatment | 7 | 17.9 |
| Patients have better relationships with the RTTs | 6 | 15.4 |
| RTTs should wait for a patient to initiate the sexual health talk | 2 | 5.2 |
| RTTs should provide holistic care to patients with cancer | 7 | 17.9 |
| Do not assume that all men prioritise sexual health issues | 3 | 7.7 |
| RTTs spend more time with patients | 3 | 7.7 |
| **Total** | 39 | 100 |

Table 6.14 provides insights into RTTs' opinions regarding prioritising sexual health counselling. It shows that 17.9% (7) of respondents believed that doctors should be responsible for sexual health counselling, not RTTs. This viewpoint could have been shared by those who were neutral or thought it was a low priority. Additionally, 17.9% (7) of respondents indicated that RTTs informed patients about treatment side effects before starting treatment, and another 17.9% (7) believed that RTTs should provide comprehensive care for cancer patients. Conversely, only 5.2% (2) of responses suggested that RTTs should wait for patients to initiate dialogue about their sexual health.

## 6.6 STATISTICAL ANALYSIS

A cross-tabulation was performed to examine the relationships between categorical variables. Given the small sample of this study and the violation of the assumptions required for the Chi-square test, Fisher's exact test was deemed more appropriate for determining the statistical significance of associations between the variables of interest using the *p*-value.

### 6.6.1 Cross-tabulation of inclusion of sexual health in curricula by qualification

Table 6.15 shows the results of cross-tabulation between curricular inclusion of sexual health topics (B1) and the qualifications of the respondents (A6), to determine if the association of these two categorical variables relating to facilitating men's sexual health was statistically significant.

**Table 6.15: Inclusion of sexual health topics in curricula, by qualification**

| Qualification | Sexual health included in curriculum Responses % (n) | | | | | Totals |
|---|---|---|---|---|---|---|
| | Never | Seldom | Some-times | Almost always | Always | |
| NDip<br>n =15 | 0.0 | 33.3 (5) | 33.3 (5) | 13.3 (2) | 20.0 (3) | 100.0 (15) |
| BTech<br>n = 8 | 0.0 | 50.0 (4) | 50.0 (4) | 0.0 (0) | 0.0 (0) | 100.0 (8) |
| Bachelor degree<br>n = 12 | 0.0 | 50.0 (6) | 8.3 (1) | 0.0 (0) | 41.7 (5) | 100.0 (12) |
| Honours degree<br>n = 11 | 0.0 | 45.5 (5) | 27.3 (3) | 0.0 (0) | 27.3 (3) | 100.0 (11) |
| Master's degree<br>n = 2 | 50.0 (1) | 0.0 (0) | 0.0 (0) | 50.0 (1) | 0.0 (0) | 100.0 (2) |

The responses of NDip and BTech holders were notably different: 33.3% (5) of NDip holders and 50.0% (4) of BTech holders reported that sexual health was seldom included in curricula. None of the BTech holders indicated it was always included, while 20% (3) of NDip holders indicated it was always included in curricula. Among Bachelor degree holders, 50% (6) said that sexual health was seldom included in curricula, and 41.7% (5) said it was always included. Bachelor Honours degree holders reported that sexual health topics were seldom (45.5%, 5), sometimes (27.3%, 3), and always (27.3%, 3) included in curricula, with no reports of sexual health topics almost always being included in curricula. Responses of Master's degree holders were evenly split between never (50%,1) and almost always (50%,1) (see Table 6.15). Despite these differences, the association between curricular inclusion of sexual health and respondents' qualification levels is statistically insignificant (*p*=0.065).

### 6.6.2 Cross-tabulation of radiation therapists' way of dealing with questions about sexual health by work experience

Table 6.16 shows the cross-tabulation results of the association between RTTs' way of dealing with questions about sexual health (B4) and years of work experience (A9).

**Table 6.16: Radiation therapists' way of dealing with questions about sexual health by work experience**

| **Dealing with questions about sexual health** | **Work experience** | | | |
|---|---|---|---|---|
| | < 2 years | 2–5 years | 5.1–15 years | 15.1–40 years |
| | **Responses % (n)** | | | |
| Never avoid | 0.0 (0) | 0.0 (0) | 6.3 (1) | 0.0 (0) |
| Seldom avoid | 15.4 (2) | 0.0 (0) | 12.5 (2) | 0.0 (0) |
| Sometimes avoid | 76.9 (10) | 77.8 (7) | 56.3 (9) | 50.0 (5) |
| Often avoid | 7.7 (1) | 11.1 (1) | 6.3 (1) | 10.0 (1) |
| Always avoid | 0.0 (0) | 11.1 (1) | 18.8 (3) | 40.0 (4) |
| **Totals** | 100.0 (13) | 100.0 (9) | 100.0 (16) | 100.0 (10) |

Table 6.16 shows that the most common response for respondents, regardless of years of work experience, was “sometimes avoid”; an average of 65.3% (8) selected this option. The tendency to always avoid these discussions increased with work experience, especially among respondents with 15.1–40 years of experience, of whom 40% (4) reported this behaviour. In contrast, less than 10% across all experience levels reported never or seldom avoiding sexual health care discussions, indicating a general trend to avoid these discussions as experience increased. There is no statistically significant association between RTTs' way of dealing with questions about sexual health by work experience during radiotherapy for prostate cancer (*p*=0.228).

### 6.6.3 Cross-tabulation of patients bringing up sexual health issues by gender of respondents

Table 6.17 provides data on how often patients bring up sexual health issues with respondents based on the respondents’ gender.

**Table 6.17: Bringing up sexual health issues by gender of respondents**

| **Patients bring up sexual health issues** | **Gender** | |
|---|---|---|
| | **% of female respondents** (n = 37) | **% of male respondents** (n = 11) |
| Never | 0.0 (0) | 18.2 (2) |

| | | |
|---|---|---|
| Seldom | 29.7 (11) | 45.5 (5) |
| Sometimes | 29.7 (11) | 18.2 (2) |
| Almost always | 10.8 (4) | 0.0 (0) |
| Always | 29.7 (11) | 18.2 (2) |
| **Total** | **100 (37)** | **100 (11)** |

Of the female respondents, 29.7% (11) indicated that patients seldom, sometimes, or always bring up sexual health issues. Male respondents reported that 45.5% (5) of patients seldom bring up sexual health issues with them, while 18.2% (2) noted that patients never and always discuss these topics (see Table 6.17). There is no statistically significant association between patients bringing up sexual health issues and the gender of the respondents (*p*=0.110).

### 6.6.4 Cross-tabulation of avoidance of discussing sexual health issues by gender

Table 6.18 presents data on whether respondents, categorised by gender (A1), avoid addressing sexual health topics (B13). The percentages in Table 6.18 indicate the level of agreement with the following statement: RTTs often avoid addressing sexual health issues with patients with prostate cancer.

**Table 6.18: Avoidance of discussing sexual health issues by gender of respondents**

| **Avoid discussing sexual health issues** | **Gender** | |
|---|---|---|
| | **% of female respondents** (n = 37) | **% of male respondents** (n = 10) |
| Strongly disagree | 13.5 (5) | 0.0 (0) |
| Disagree | 46.0 (17) | 20.0 (2) |
| Neither agree nor disagree | 10.8 (4) | 10.0 (1) |
| Agree | 13.5 (5) | 30.0 (3) |
| Strongly agree | 16.2 (6) | 40.0 (4) |
| **Total** | **100.0 (37)** | **100.0 (10)** |

The key findings on the avoidance of discussing sexual health issues by gender of respondents are as follows: 46.0% (17) of female respondents disagreed with avoiding sexual health discussions, while only 20.0% (2) of males held the same opinion. In contrast, 40.0% (4) of males strongly agreed with avoiding such discussions, while only 16.2% (6) of females shared this view. Additionally, 30.0% of male RTTs agreed that they avoided addressing sexual health, compared to 13.5% (5) of females (see Table 6.18). There is no statistically significant association between gender and the avoidance of addressing sexual health issues (p=0.181).

### 6.6.4 Cross-tabulation of whether culture influences respondents' approach to sexual health topics, by respondents' race

The cross-tabulation results in Table 6.19 show whether culture influences respondents' approach to sexual health topics (B9) according to race (A4), whether African, White, Asian, Indian or Coloured.

**Table 6.19: Influence of culture on the approach to sexual health topic by race**

| **Culture influences the approach to sexual health** | **Race %** | | | | |
|---|---|---|---|---|---|
| | **African** (n = 29) | **White** (n = 13) | **Asian** (n = 1) | **Indian** (n = 4) | **Coloured** (n = 1) |
| Never | 20.7 (6) | 15.4 (4) | 0.0 (0) | 50.0 (0) | 0.0 (0) |
| Seldom | 41.4 (12) | 15.4 (2) | 0.0 (0) | 50.0 (2) | 0.0 (0) |
| Sometimes | 6.9 (2) | 30.8 (4) | 0.0 (0) | 0.0 (0) | 100 (1) |
| Almost always | 27.6 (8) | 30.8 (4) | 100 (1) | 0.0 (0) | 0.0 (0) |
| Always | 3.4 (1) | 7.6 (1) | 0.0 (0) | 0.0 (0) | 0.0 (0) |
| **Total** | 100 | 100 | 100 | 100 | 100 |

Among the African respondents, 41.4% (14) reported that culture seldom influences their approach to sexual health, while 27.6% (8) of them stated it almost always does. Among White respondents, 30.8% (4) indicated that culture sometimes or almost always plays a role, while 50% (2) of Indian respondents indicated that culture either never or seldom influenced their approach. There is no statistically significant association between whether culture influences the approach to sexual health topics and race (*p*=0.201).

## 6.7 PROSPECTS OF RADIATION THERAPISTS TO FACILITATE MEN'S SEXUAL HEALTH

Part of the survey with RTTs was to identify respondents' views on expanding their role in sexual health counselling to advance whole-person care in oncology and to care for patients receiving radiotherapy for prostate cancer. Table 6.20 presents findings on the opinions of respondents regarding their level of agreement or disagreement concerning the idea of enhancing RTTs' involvement in sexual health counselling.

**Table 6.20: Role extension for radiation therapists in sexual health counselling**

| Key questions | Strongly disagree % | Disagree % | Neither agree nor disagree % | Agree % | Strongly agree % | % Number of respondents |
|---|---|---|---|---|---|---|
| RTTs have a role to play in promoting sexual health counselling (D19) | 2.1 | 4.2 | 27.1 | 45.8 | 20.8 | 100 |
| I understand the scope of cancer patient counselling for RTTs (D20) | 4.2 | 8.3 | 20.8 | 60.4 | 6.3 | 100 |
| The role of RTTs in sexual health counselling for patients with prostate cancer is not well defined (D21) | 4.2 | 2.1 | 20.8 | 37.5 | 35.4 | 100 |
| I support the role of extension in sexual health facilitation for RTTs (D22) | 2.1 | 8.3 | 20.8 | 45.8 | 22.9 | 100 |

The opinions of respondents on extending RTTs' role in sexual health counselling reveal that 45.8% (22) agreed that RTTs should be involved in counselling, with only 2.1% (1) strongly disagreeing. Most respondents, 60.4% (29), indicated they understood the scope of practice for RTTs in counselling cancer patients, while 4.2% (2) strongly disagreed. Additionally, 37.5% (18) agreed that the role of RTTs in sexual health counselling for prostate cancer patients was not well defined, with 4.2% (2) strongly disagreeing. Lastly, 45.8% (22) supported expanding RTTs' role in facilitating sexual health, with 22.9% (11) strongly agreeing and 2.1% (1) strongly disagreeing (see Table 6.20).

## 6.8 STRATEGIES TO IMPROVE SUPPORTIVE CARE FOR SEXUAL HEALTH IN ONCOLOGY

Respondents suggested several improvements to SCMSH in oncology settings, including revising the radiation therapy curriculum, promoting continuous professional development, reviewing the scope of practice of RTTs, implementing multidisciplinary cancer care, enhancing information sharing and increasing sexual health awareness. Figure 6.10 displays the frequency of phrases related to these themes as derived from content analysis of responses to question D23 of the questionnaire.

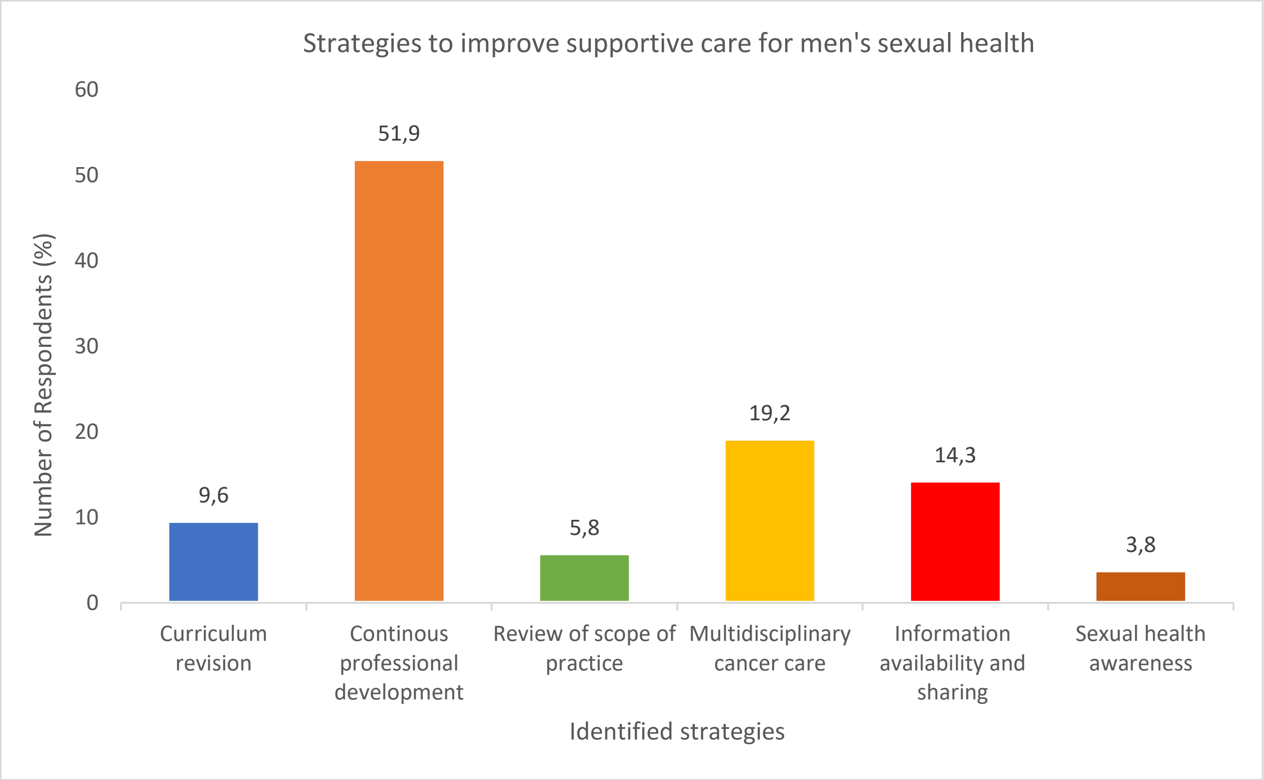


**Figure 6.10: Strategies to improve sexual health support in oncology settings**

Figure 6.10 shows that more than half of respondents (51.9%) believed that attending workshops, support groups, and seminars on sexual health was essential for continued professional development. Additionally, respondents (19.2%) referred to the importance of a multidisciplinary cancer care approach for improving sexual health support in oncology settings. Approximately 14.3% of respondents highlighted the need to ensure that sexual health information is easily accessible and disseminated to patients and staff. Respondents (3.8%) also referred to the importance of sexual health awareness for oncology health professionals in oncology.

## 6.9 SUMMARY

This chapter presented the findings of the quantitative phase (Phase 2) of this exploratory sequential mixed methods study. It presented a summary of descriptive statistics of respondents' demographic data and trends in their attitudes and opinions on incorporating sexual health into patient counselling before, during and after radiotherapy. The respondents' free-text responses were analysed using content analysis, converted into quantitative data where applicable, and examined further using descriptive statistics. Cross-tabulation results were presented to show the associations between categorical variables of interest in this study. Fisher's exact test result (*p*-value) was appropriate for determining the statistical significance of the associations between these categorical variables. The next chapter will integrate qualitative and quantitative findings and present a discussion led by the research questions.

# CHAPTER 7

# INTEGRATION OF FINDINGS (PHASE 1 AND PHASE 2)

*Wholeness is not achieved by cutting off a portion of one's being,*
*but by integration of the contraries.*

Carl Jung

---

## 7.1 INTRODUCTION

This chapter will integrate and discuss the findings of Phases 1 and 2 of the study, which were presented in Chapters 5 and 6. This chapter will interpret the experiences reported by patients who had been treated for prostate cancer with radiotherapy and the perspectives of RTTs on their role in facilitating SCMSH in oncology. This chapter will integrate and discuss the findings of Phases 1 and 2. The discussion of the findings will be underpinned by the health promotion theory and the whole-person care model (see Section 2.2) and led by the research questions outlined in Section 1.5.

## 7.2 SUMMARY OF INTEGRATED FINDINGS

This summary presents the integrated key findings of Phase 1, from interviews with patients after prostate cancer diagnosis and treatment, combined with the findings of Phase 2, namely the perspectives of RTTs about facilitating sexual health in men receiving radiotherapy for prostate cancer, which had been gathered through a questionnaire survey. To present these key findings, the Likert scale results, where applicable, were simplified into three categories: (i) "agree" represents "strongly agree" and "agree"; (ii) "disagree" is a combination of "strongly disagree" and "disagree"; and (iii) "neither agree nor disagree". In the summary and discussion of the integrated key findings, it is important to take note that participants refer to the patients treated for prostate cancer who were interviewed in Phase 1, while respondents refer to the RTTs who were surveyed in Phase 2.

### 7.2.1 Experiences of patients after diagnosis and treatment of prostate cancer

> *I wanted to ask him about ... when I went home, I said to my wife, "Hey, something is not right: like the hair; like everything down there - the penis was also shrinking". P02Intv.*

The experience quoted above suggests that participants were open to talk about their sexual health concerns with oncology health professionals. Participants were confronted with multifaceted changes in sexual functioning that extended beyond a single aspect of sexual health and encompassed elements such as decreased penis size, reduced libido, changes in orgasm (anorgasmia) and ejaculation dysfunctions. These shifts in sexual functioning, often accompanied by dry ejaculation, paint a complex picture of the challenges faced by these men.

Some older spouses of participants appeared to be less concerned about sexual intimacy due to their own ill health. This became clear in stories told by the participants:

> *One man told me, "No. She does not even like to talk about such things. She says she is old, and it makes her tired. She wants nothing to do with it. P07Intv.*

> *She knows but does not mind because she also no longer has those feelings. Her feelings disappeared before mine. P10Intv.*

Contrary to these experiences, a distinct story emerged of men facing formidable barriers while navigating a life overshadowed by erectile dysfunction. For some men, erectile dysfunction experience extended over five years after prostate cancer treatment and gave rise to a multitude of complexities in their interactions with women, which led some men to experience anxiety about involvement in sexual activity because of complexities in interactions with women and anxiety about engaging in sexual activity. One participant commented on the challenges men face in disclosing sexual health issues to new partners, which often resulted in the relationship being terminated:

> *No, I did not tell her anything. I hesitated to share. P06Intv.*

Many participants reported that prescribed erection-enhancing drugs, known as PDE5 inhibitors, often did not produce the expected results.

> *I think it is Viagra. Yes, Viagra. I normally buy it: it never does anything. P07I.*

Amid these difficulties, a few men found ways to adapt to a changed life in which intimacy with their partners was no longer part of the equation. One participant shared,

> *Since 2013, after the operation, I have not slept with her. It has been six years now. This year will be the seventh. She sleeps with the grandchildren; I sleep in the other bedroom. P07Intv.*

Furthermore, some participants avoided romantic associations with women in order to prioritise their mental well-being.

> *No. I got children and grandchildren; I do not care about a woman. P10Int.*
>
> *Yes, I am scared. Other women ask me what kind of a man I am who does not want a woman; I am all right, I do not want one. P11Int.*

### 7.2.2 Supportive care and facilitation of sexual health for male patients

Sexual health dialogue between patients and oncology health professionals has been identified as a challenge in the clinical setting. The role of RTTs in South Africa in addressing sexual health for patients undergoing radiotherapy is not defined clearly. In total, 64.6% of survey respondents reported making efforts to address patients' sexual health questions during radiotherapy. Table 6.5 shows that a few respondents tried to offer sexual health advice to male patients, as reported by 35.6% of the qualitative responses (Resp17Svy). Below are examples of responses:

> *I try to answer them as best as I can; otherwise, I refer them to the oncologist if they still want more information. Resp01Svy.*
>
> *I answer truthfully and professionally, and if I don't have enough knowledge, I refer the patient to the Dr. Resp02Svy.*
>
> *Prostate patients become anxious about their sexual health; therefore, it is important to reassure them about their concerns. Resp03Svy.*

Participants reported that they were hesitant or unsure of whether it was appropriate to ask oncology health professionals about their sexual health concerns, as is evident in the following quote:

> *I never asked. I was always scared to ask. P02Intv.*

This could explain why 43.8% of the respondents indicated that male patients occasionally initiated conversations concerning sexual health issues. Nonetheless, some respondents were uncomfortable to initiate discussions about sexual health issues with patients treated for prostate:

> *If the patient does not ask about their sexual health, then I will not discuss it. Resp31Svy.*

However, one-third (33.3%) of respondents believed that it is necessary to initiate these conversations with patients about their sexual health before, during and after radiotherapy in oncology.

Participants' experiences expose the ongoing communication barriers participants and oncology health professionals face when they initiate dialogue about men's sexual health. For example, a participant said,

> *I was worried and did not know whether I should talk to the doctor, so I kept quiet. P02Intv.*

Similarly, some respondents in Phase 2 indicated that RTTs rarely initiate sexual health dialogues with participants, as is evident from the following quote:

*I can never initiate such a topic unless asked about a specific problem by the patient.* Resp20Svy.

Another perspective about a radiation oncologist emerged from a participant, who reported:

> *She [radiation oncologist] assured me not to worry, that it would improve. She also advised me to communicate with my partner about the issue, and I agreed. P01Intv.*

A sad story was told by a participant aged between 55 and 65 years old, who struggled to get an erection for penetrative sex. This loss causes a heavy weight for men whose partners were younger, and serves as a reminder that life's journey persists beyond middle age and that desires and aspirations endure, as encapsulated by this comment:

> *I still look young, and I still have a wife. It is painful, my brother. P07Intv.*

A common struggle among these men arose amid this challenge, that is, their partners' desire for stronger penile erections. The partners of many participants were still sexually active and in their childbearing years, which added complexity to the situation, as illustrated by this question by a participant:

> *From your side, do you think that I can ever have babies or have normal sex? P08Intv.*

These comments underline the social challenges couples face after prostate cancer treatment. For certain participants, fulfilling their spouses' wishes to conceive added substantial complications to the arduous journey of recovering from the erectile dysfunction. While participants grappled with the challenges of erectile dysfunction, some spouses responded insensitively; hurtful comments can have lasting negative effects on self-esteem and emotional well-being.

> *Yes. She said that I only look like a man, but I am not a man in bed. P10Intv.*
>
> *She is crying for me to get help. It has been over five years now; she cannot take this anymore. P03Intv.*

### 7.2.3 Inclusion of sexual health as part of routine patient counselling

A self-assessment of respondents regarding the priority of sexual health counselling during patient interactions revealed that 29.2% considered it essential. However, qualitative probing of open-ended responses exposed a paradoxical array of reasons. Table 6.14 provides statistics quantifying the free-text analysis: i) 17.9% indicated that sexual health counselling was the responsibility of doctors; ii) 17.9% stressed the importance of informing patients about treatment side effects before treatment; and iii) 17.9% believed RTTs should deliver holistic care. These are examples of responses:

> *Counselling is done by the sisters and doctors. radiation therapists remind the patients and make sure they understand and give clarity or send to the doctor. Resp13Svy.*
>
> *Information will be diluted if we just counsel without being adequately prepared/trained to counsel. If training is avoided, then yes, this is an essential priority. Resp07Svy.*
>
> *It is good to prepare them for sexual challenges that they might experience so that they can prepare themselves. Resp19Svy.*

About one-third of the respondents agreed that RTTs should initiate conversations about sexual health with patients before, during and after radiotherapy. Similarly, some respondents appeared to believe they should take the initiative to break the silence about the side effects of treatment on sexual health during their interactions with patients.

> *I find it much more effective when patients are fully counselled about their treatment and its potential side effects even before they embark on it. Resp01Svy.*
>
> *Patient needs to be told before treatment how the treatment is going to affect their sexual health. During treatment, to reassure them. After treatment to check their progress on sexual health issues. Resp09Svy.*

Participants and respondents seemed to have a good rapport, though respondents often avoid discussing sexual health issues.

> *No, we [radiation therapists] did not talk about such issues at the machine. P06Intv.*
>
> *The only person with whom I used to talk was radiation therapist X; I asked him how certain things work, and he explained to me that the treatment was helping to clean cancer. P02Intv.*

Figure 6.7 shows that 39.6% of respondents were neutral on whether RTTs often avoided addressing sexual health issues in prostate cancer patients, while 29.2% agreed and 31.2% disagreed. Nonetheless, 28.3% of respondents preferred that radiation oncologists and 22.1% that RTTs facilitated sexual health discussions for patients treated for prostate cancer in radiation oncology settings. The association between avoiding addressing sexual health and gender was found to be statistically insignificant (*p*-value > .05). This means gender does not significantly influence the tendency of respondents to avoid discussing sexual health issues with prostate cancer patients. Nonetheless, respondents felt ill-equipped to deal with the sexual health concerns of patients shared with them.

> *I always attend to the needs of patients. If it is beyond my scope, then I refer them to the doctor. Resp04Svy.*

### 7.2.4 Factors affecting sexual health communication in oncology

Factors affecting sexual health communication that were identified by this study include religion, gender, age and culture. The data in Table 6.7 paint a multifaceted picture of these views. Almost one-third (31.3%) of the respondents agreed that religion influenced oncology health professionals’ attitudes towards discussing sexual health with patients. When asked to provide written feedback, respondents’ highest-scoring category of religion-related responses was “Religions have different perceptions of sexual health issues” (24.2%).

> *Some religions find it difficult and consider the topic sensitive, while others are comfortable. Resp01Svy.*

Table 6.7 shows that 39.6% of respondents agreed that gender influences how oncology health professionals handle sexual health issues during counselling, while only 6.3% disagreed.

> *Males or females find it easy to communicate their issues with the same gender (especially older patients); in this case, it is a male prostate cancer patient, so yes, gender does influence how healthcare professionals approach sexual health topics. Resp02Svy.*

> *I am not comfortable with speaking to patients about sexual health, especially male patients. Resp17Svy.*

Additionally, 40.4% of respondents reported that patients found it easier to discuss sexual health issues with someone of the same gender. Some participants expressed discomfort about discussing these matters with female staff, as reflected in this quote:

> *There were only women here. P02Intv.*

No statistically significant association was found between "patients bringing up sexual health issues" and the gender of the respondents ($p > .05$).

From patients’ perspectives, the age gap between RTTs and participants appeared to influence how oncology health professionals approached conversations about sexual health. For example, one participant noted,

> *They were young people; they only had to put the machine in. There was no doctor who would explain everything to you. P01Intv.*

In turn, about 10% of respondents said that starting a dialogue about sexual health with elders can be awkward.

Among respondents, 33.3% were neutral on whether culture influenced oncology health professionals’ approach to discussions about sexual health, while 47.9%

agreed it played a significant role (see Table 6.7). In written feedback, 20.7% of respondents stated that culture had no impact and was irrelevant to the topic (see Table 6.8). Here are examples of contrasting perspectives of respondents on the role of culture:

> *I do not have any cultural reason why I cannot discuss a patient's sexual health with them. Resp08Svy.*
>
> *Healthcare professionals need to consider a patient's cultural values when approaching one topic. They need to be respectful and careful not to offend the patient. Resp22Svy.*

Statistical analysis found no significant association between respondents' race and their views on the influence of culture (*p*-value >.05), which indicates that race did not affect perceptions of cultural influence on approaches to sexual health in the present study.

The experiences of participants revealed that consulting different doctors at each follow-up visit to the clinic affected the continuity of dialogue on sexual health in oncology clinics.

> *I was here in November, and when I come back on the 11th of next month, there will be a new doctor. That is why I don't bother remembering their names anymore. I don't know why they do that. P11Intv.*

Respondents considered counselling patients as an activity outside the scope of RTTs' practice:

> *The scope of the profession does not really include patient counselling, as there are people responsible for that. Resp05Svy.*
>
> *The topic is hardly brought up. Radiation therapists were not given intensive training when it comes to the topic. Neither party wants to be accused of sexual harassment. Resp29Svy.*

### 7.2.5 Role extension of radiation therapists in radiation oncology

The survey found that 66.6% of respondents agreed that they play a role in sexual health counselling. The respondents supported the inclusion of sexual health conversations as standard practice for RTTs throughout treatment. Additionally, 66.7% understood the level of counselling required for patients with cancer. However, there was notable inconsistency in their comprehension of the scope of practice in radiation oncology. A significant number of respondents, 72.9%, expressed that the current scope of their responsibilities does not adequately define RTTs' role in sexual health counselling, which represents a significant barrier. Furthermore, 68.7% supported extending RTTs' role in facilitating sexual health.

### 7.2.6 Support required by radiation therapists to facilitate men's sexual health

More than half the respondents (51.9%) deemed workshops, support groups and seminars on sexual health counselling essential for their continuing professional development. One insightful comment from the respondents adds depth to these findings:

> *Detailed training on how to counsel patients and the incorporation of multidisciplinary team meetings focused on sexual health could enhance our understanding and approach to patients. Resp02Svy.*

Moreover, 19.2% of the respondents emphasised the pivotal role of multidisciplinary collaboration among oncology health professionals who worked with patients with cancer to facilitate sexual health. Only a small percentage (3.8%) indicated that RTTs required awareness of men's sexual health. Lastly, 14.3% of respondents highlighted the significance of accessible information on sexual health.

## 7.3 DISCUSSION

This study argues that sexual health should be integrated into routine patient counselling and that RTTs should be involved in facilitating SCMSH in men receiving radiotherapy for prostate cancer in oncology settings. Patients undergoing treatment for prostate cancer often experience sexual dysfunction, which leads to imbalances in their physical, psychological and spiritual well-being. The interconnectedness of biological, psychological, emotional and social factors that influence the quality of life of patients with sexual health challenges is underpinned by the whole-person care model and health promotion theory of nursing, which served as theoretical frameworks for this study, within which the findings of this study are interpreted and discussed.

This discussion is intended to establish whole-person care to address the physical, mental and spiritual challenges of patients with sexual health challenges after prostate cancer diagnosis and treatment.

> Research Question 1: What are the lived experiences of men after the diagnosis of prostate cancer and radiotherapy?

The participants reported experiencing decreased libido, erectile dysfunction and ejaculatory dysfunction after prostate cancer diagnosis, particularly after radiotherapy and hormone therapy. Current literature highlights sexual dysfunction as a common consequence for men treated for prostate cancer (Dickstein et al., 2023; Hayashi et al., 2023; Watson & Kissane, 2020). This is consistent with a study conducted in the Netherlands by Grondhuis Palacios et al., (2018), which found the highest incidence of erectile dysfunction immediately after treatment in men who had undergone laparoscopic radical prostatectomy, followed by those who had undergone a combination of intensity-modulated radiotherapy and hormone therapy. Prostate cancer treatment leads to sexual dysfunction and alters fertility, male identity and intimate partner relationships (Hayashi et al., 2023; Jonsdottir et al., 2016). Participants who experienced prolonged erectile dysfunction, for more than five years after undergoing treatment for prostate cancer, eventually reached a stage where they had no choice but to accept their predicament (see Section 5.3.5.1). Some studies suggest that participants who had had healthy sex lives before being diagnosed with prostate cancer and who are treated with androgen deprivation/hormonal therapy are less likely to return to baseline sexual levels after the therapy (Donovan et al., 2018; Joyce et al., 2022). A study by Duthie et al., (2020) indicates that men who were sexually inactive before androgen deprivation/hormonal therapy are unlikely to engage in sexual activity after the therapy.

Sexual dysfunction is correlated with negative experiences in sexual relationships and affects the overall well-being of patients (Bober et al., 2016; Gryzinski et al., 2022; Gordon, 2021). Likewise, this study observed that participants who had been treated for prostate cancer faced sexual health problems such as decreased sexual activity in their relationships, which caused various challenging psychosocial problems. For example, some participants avoided forming new romantic relationships, to circumvent shame and humiliation. In addition, participants reported that some of their partners were impatient and pressured them to regain erectile function, which disrupted their intimate relationships. However, other participants eventually came to terms with this situation.

People with cancer and their affected partners often have unmet sexual information and support needs (Gilbert et al., 2016). Ramlachan et al., (2022) posit a lack of specialised psychosocial and sexual therapies for patients with cancer in the African context, which highlights the need for oncology health professionals to recognise that providing psychosocial support to patients during cancer treatment extends beyond patient care to their families. Psychosocial distress includes emotional or mental health and social problems (e.g. financial concerns, retirement age, stigma of cancer and social and spiritual support concerns) (Weis, 2015). In male patients with erectile dysfunction, this distress may be exacerbated and is associated with psychosexual problems arising from sexual dysfunction.

Several studies, including Albaugh et al. (2017), Kinnaird and Stewart-Lord (2021), and Mehta et al. (2019), show that male patients were dissatisfied when doctors prioritised cancer control during treatment decision-making but did not adequately address their sexual function-related challenges. Male patients treated for prostate cancer usually find themselves ill-prepared when they experience sexual dysfunction during and after prostate cancer treatment. Given this, oncology health professionals should prioritise improving the quality of life of patients with cancer because improvements in cancer treatment technology only increase patient life expectancy.

> Research Question 2: How did men experience the facilitation of supportive care for their sexual health in radiation oncology during and after radiotherapy for prostate cancer?

According to the experiences of participants, it seems that radiation oncologists and registrars proactively discuss the possibility of sexual health problems arising from prostate cancer and its treatment, thereby demonstrating a proactive attitude to preparing for this challenge. However, it remains unclear whether support for sexual health counselling continues during follow-up appointments once a patient’s treatment has been completed. Grondhuis Palacios et al., (2018) point out that, in follow-up consultations, limited consideration is given to the effects of treatment-related sexual dysfunction on the relationships of men with prostate cancer and their partners.

Studies have shown that sexual health conversations between oncology health professionals and patients treated for cancer rarely occur in oncology facilities (Krouwel et al., 2019; Park et al., 2009; Wang et al., 2018).

Although respondents in this study generally recognised the importance of sexual counselling, many still had difficulty integrating it seamlessly into their regular practice and discussing it openly. Oncology health professionals cite various barriers as reasons, including insufficient knowledge, limited training, time constraints and concerns about crossing boundaries in patients' personal lives (Duimering et al., 2020; Krouwel et al., 2019).

Alomair et al., (2020, 2022), Krouwel et al., (2019) and Phahlamohlaka and Mdletshe (2022) point out that gender, religion and culture play a significant role in shaping the approach to sexual health communication between patients and healthcare providers. Their findings, to some extent, corroborate the findings of this study, especially concerning gender. Patients may want to talk about sexual health issues; however, oncology health professionals still face barriers when it comes to discussing these issues (Bober et al., 2016). In the present study, patients faced an additional barrier to sexual health dialogue when they had to discuss their sexual health issues with a different doctor during every regular follow-up visit. It appears that continuity in care for sexual health was disrupted by the rotation of registrars between oncology clinics. So, to improve sexual health care in oncology, it is imperative to identify both barriers and enablers, and to take into account organisational, structural, and individual factors.

An ideal oncology department should be staffed by caregivers who proactively address sexual health issues at every clinic visit. Patients often expect doctors to inform them about the sex-related side effects of cancer and its treatments, while doctors assume patients will raise concerns if they have any (Krouwel et al., 2019). In this study, RTTs did not proactively discuss sexual health matters unless they were asked, despite spending extended time with patients during treatment. Therefore, RTTs need a clear strategy for initiating sexual health conversations before, during and after treatment. Applying the 5 A's behavioural change framework could be beneficial, as it has been effective in offering counselling for sensitive topics such as obesity and sexual health (Park et al., 2009; Quinn et al., 2013; Sturgiss & van Weel, 2017).

According to the experiences reported by participants, radiation oncologists and registrars refer male patients with sexual function problems to men's clinics for erectile dysfunction treatment. Oral PDE5 inhibitors, such as sildenafil (Viagra), tadalafil (Cialis), and vardenafil (Levitra), are commonly used to treat erectile dysfunction by enhancing blood flow to the penis and facilitating erections (Mazzilli, 2022; Vickers & Satyanarayana, 2002; Yafi et al., 2016). First-line treatment for conventional erectile dysfunction, specifically PDE5 inhibitors, often yields unsatisfactory outcomes in patients with prostate cancer (Grondhuis Palacios et al., 2018; Roth et al., 2008). It was no different in this study because few male patients responded to PDE5 inhibitors.

Integrating couple counselling into treatment plans could help couples overcome some relationship problems arising from sexual dysfunction, especially for men who have difficulty regaining erections despite taking PDE5 inhibitors. In this study, it was unclear whether doctors made couple counselling available to patients in oncology clinics as an intervention for psychosocial support. Above all, the findings highlight the absence of continuing psychosocial and sexual health care for patients receiving radiotherapy for prostate cancer in oncology.

> Research Question 3: What are the perspectives of RTTs regarding their involvement in facilitating sexual health in patients receiving radiotherapy for prostate cancer?

The respondents shared a variety of perspectives regarding the inclusion of sexual health in routine oncology counselling. However, the overall findings highlight the need for the active involvement of RTTs in addressing the complex psychosocial needs of patients with cancer, which go beyond their traditional responsibilities. The varied viewpoints of respondents regarding the inclusion of sexual health as part of routine counselling suggest that a knowledge gap exists in whole-person care in oncology.

This study revealed gaps in the counselling of patients regarding the adverse effects of radiation on their sexual health because not all RTTs provided this advice, although some did.

In South Africa, RTTs are expected to provide psychosocial counselling to cancer patients; however, their scope of practice does not explicitly include sexual health counselling (Health Professions Council of South Africa, 2021). This was evident in the study because some RTTs expressed discomfort about discussing sexual health issues and preferred referring patients to radiation oncologists, while others believed it was not their responsibility. This research study advocates for supporting RTTs in providing sexual health counselling by leveraging its findings to develop a model that actively involves them in facilitating SCMSH. Nevertheless, it is still acceptable for RTTs to refer patients to doctors when necessary, as observed in the current study. Radiation therapists regularly interact with patients undergoing cancer treatment, but it is concerning when some of them neither discuss patients' sexual health concerns nor refer them to radiation oncologists. Association of Community Cancer Centers (2022), Elsner et al., (2017), and O’Neill et al., (2023) point out that approximately half of patients undergoing radical radiotherapy experience some level of anxiety and stress. Radiation therapists are uniquely positioned as frontline oncology health professionals to communicate with patients and gain more experience discussing patients’ treatment experiences.

Radiation therapists in this environment continue to recognise radiation oncologists as primary providers of sexual health support for patients with cancer. However, they also acknowledged the involvement of oncology nurses, social workers, clinical psychologists and themselves as contributors to sexual health counselling. This upholds a multidisciplinary approach in the provision of psychosocial and sexual health counselling deficits in men treated for prostate cancer. According to Dyer and Das Nair (2013), health professionals should engage in sexual health dialogues with patients and overcome barriers to communicating about sexual health. Numerous studies have highlighted disparities in expectations regarding sexual health conversations between oncology health professionals and cancer patients undergoing treatment (Hordern & Street, 2007a; Kelder et al., 2022; Krouwel et al., 2019; Sporn et al., 2015).

The findings of the present study corroborate the literature on sexual health communication between oncology health professionals and male patients (see Section 3.6). Many respondents lacked the confidence to initiate sexual health discussions unless patients prompted them. Despite daily interactions with patients treated for prostate cancer, it appeared that most respondents often avoided these dialogues as part of psychosocial support, although some of them took the initiative to address the adverse sexual health effects of radiation with patients receiving radiotherapy for prostate cancer. This suggests that, while some psychosocial support was provided, other respondents reported referring patients to radiation oncologists because they were comfortable discussing sexual health with patients. Societal taboos surrounding sex-related topics often discourage open discussions and patients from seeking help (Marshall & Sykes, 2011; Traumer et al., 2019), though I believe this should not be the case in healthcare settings. Sexual health is somewhat stigmatised, to the extent that some patients do not seek help voluntarily or speak openly without being asked because of barriers that are well documented in the literature (Bdair & ConsTantino, 2017; Dai et al., 2020).

In several African cultures, it may be considered impolite or disrespectful to discuss sexual health issues with older people, especially the opposite sex (Haesler et al., 2016; Maree & Fitch, 2019). In this study, it appears that some participants might have avoided discussing their sexual health with oncology health professionals during radiotherapy for prostate cancer due to age differences. Conversely, respondents had different views on the influence of culture and gender on whether oncology health professionals approach the issue of sexual health. These differing views illustrate the complex landscape of sexual health communication in oncology. While some respondents are unaffected by cultural considerations, others emphasise the need for cultural awareness and sensitivity to promote respectful and effective interactions.

Table 6.19 reveals that African respondents experienced the influence of culture the strongest, while White and Indian respondents displayed more diverse perspectives. However, no statistically significant correlation (*p*-value > .005) was found between race and cultural influence on addressing sexual health topics.

According to the findings, it appears that, while most respondents generally disagreed that they avoided discussions about sexual health with patients, a subset of respondents acknowledged that they did avoid these conversations because of perceived inadequacies in knowledge, skills and training in sexual counselling.

Importantly, the analysis indicates no statistically significant association between gender and the tendency to avoid addressing sexual health, as reflected by a *p*-value greater than .005. This suggests that the respondents’ gender did not influence their avoidance of sexual health discussions, but may be more closely related to other factors, such as professional confidence and training.

Sexual health support is not routinely provided for patients who are receiving radiotherapy for prostate cancer from RTTs in radiation oncology. Radiography professionals have specific rules of practice, but some find these to be too restrictive and they seek to expand their role (Cowling, 2008), among which expansion of the role of RTTs in providing sexual health supportive care, as argued in the present study. In South Africa, the scope of practice for sexual health support in radiation therapy is not well defined (Health Professions Council of South Africa, 2021). Advancing radiation therapy education and training is the responsibility of universities offering these qualifications. Therefore, universities need to accurately interpret and define appropriate sexual health care provided by RTTs to patients with cancer and incorporate the topic into curricula.

Participants' accounts indicate that supportive care provided by RTTs during prostate cancer treatment mainly focused on counselling about acute radiation side effects, and often overlooked sexual health. Halkett and Kristjanson (2007) and O’Neill et al., (2023) emphasise the high value patients place on radiation therapist support during oncology treatment, which highlights the positive effect of effective communication. This suggests that RTTs could incorporate sexual health topics in routine counselling. Despite the technical demands of their profession, RTTs are also responsible for providing supportive care throughout the radiotherapy course (Halkett & Kristjanson, 2007; Mattarozzi et al., 2019).

The scope of radiation therapy practice in South Africa advocates for RTTs to collaborate with radiation oncologists to ensure optimal patient care and psychosocial support (Health Professions Council of South Africa, 2021), though this is not commonly practiced. The advancement of radiographers’ roles in advanced and consultant practice has progressed significantly in countries such as the United Kingdom, United States, Canada, Australia and New Zealand, leaving Africa behind (Field & Snaith, 2013). Similar advancements could benefit RTTs in South Africa and beyond.

> Research Question 4: What support do RTTs need to be involved in facilitating sexual health in radiation oncology?

Participants’ experiences after prostate cancer treatment revealed gaps in sexual health support in oncology settings, which underscores the need to enhance RTTs’ role in routine patient counselling. However, some respondents believed that addressing sexual health falls outside their professional duties and should be handled by other specialists. A smaller group recommended providing additional training for RTTs so that they could support sexual health counselling. For example, one respondent suggested,

> *Detailed training on patient counselling and multidisciplinary team meetings to improve sexual health care. Resp02Svy.*

Other respondents advocated for involving other relevant healthcare professionals, such as oncologists, oncology nurses, clinical psychologists and social workers, to enhance sexual health facilitation in oncology settings.

Ramlachan et al., (2022) recommend a multidisciplinary team, including nurses, oncologists, urologists and psychologists, to address the psychosocial and sexual health needs of cancer patients. Respondents in this study highlighted the need to revise the radiation therapy curriculum and implement continuous professional development to enhance RTTs' roles in sexual health discussions (Figure 6.10). Sexual health education is not always integrated into health-related degree programmes, and this shortcoming leaves oncology graduates unprepared for patient communication in clinical settings (Albers et al., 2020; Beebe et al., 2021; Eid et al., 2020; Gordon, 2021). Short courses mainly improve knowledge and communication, with limited impact on personal attitudes, though Stellenbosch University's curriculum revision offers an opportunity to integrate this education (Van Deventer et al., 2021).

## 7.4 SUMMARY

In Chapter 7, Phase 1 and Phase 2 findings were integrated and discussed, and erectile dysfunction as a prevalent issue among men treated for prostate cancer and a factor that affected their intimate relationships, was highlighted. Some participants found PDE5 inhibitors ineffective. The study identified challenges facing the provision of sexual health support for these men, with differing views among respondents about their role in providing this support. Challenges included uncertainties about their scope of practice and their need for additional training in sexual health counselling. Respondents were generally not proactive in initiating sexual health conversations with prostate cancer patients, but advocated for a multidisciplinary approach involving all healthcare professionals. The next chapter will provide details of a concept analysis for building a model for facilitating SCMSH.

# CHAPTER 8

# MODEL DEVELOPMENT: CONCEPT ANALYSIS

A conceptual framework is a ‘frame that works’ to put those concepts into practice.
Paul Hughes

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## 8.1 INTRODUCTION

It is my view that anecdotal practice is unfounded, and pursuing practice without evidence is not scientifically sound. The integrated findings reported in the previous chapter helped identify the central concept for developing a model to facilitate SCMSH for patients with prostate cancer receiving radiotherapy from RTTs. Concept analysis was conducted to explore this central concept, informed by the study’s findings, to understand its meaning, usage and application in the SCMSH model. This chapter will define the concept of a model, outline the model development process specific to this study, categorise key concepts distilled from Phases 1 and 2 findings and present a conceptual framework for developing a model to facilitate SCMSH for patients receiving radiotherapy for prostate cancer in oncology settings.

## 8.2 DEFINITION OF A MODEL

The term model refers to “a creative and rigorous structuring of ideas that project a tentative and systematic view of phenomena” (Chinn & Kramer, 1999:106). Walker and Avant (2014: 61) define a model as “any device used to represent something other than itself, and parts of the model should correspond to the theory it represents”. According to Chinn and Kramer (2015) and Chinn et al., (2022), a model is the formal, symbolic, schematic depiction of relationships between phenomena and reality, conceptualised through empirical knowledge development. In this context, a model refers to the preliminary formulation of a theory that guides thoughts or actions. Furthermore, I consider a model to be a precursor of an emerging theory that uses visual representations of interrelated ideas to simulate phenomena, processes and practices.

## 8.3 OVERVIEW OF THE MODEL DEVELOPMENT PROCESS

The model was developed using the theory generation steps proposed by Chinn and Kramer (2011), Dickoff et al., (1968) and Walker and Avant (2014). The model and theory development processes share similar steps, in which the model typically precedes the theory (Havenga et al., 2014). There are four levels of theory generation, described by Walker and Avant (2014): grand, middle-range, situation-specific and practice-oriented. This study focused on a practice-based theory to enhance SCMSH. The conceptual and theoretical frameworks used to underscore the interpretation and understanding of the findings, in line with the aim of this study, were drawn from the fields of nursing, psychology and the social sciences (see Chapter 2) because the radiography profession is still in the early stages of developing its own unique theories or models to enhance patient service delivery. According to Walker and Avant (2014), the first stages of theory development involve identifying and defining concepts and formulating relational statements. Walker and Avant (2014) approach contributed to the conceptual analysis stage of the model development process adapted for this study. The four-stage theory generation steps proposed by Chinn and Kramer (2011) underpin the model development process. The steps of model development include concept analysis, relationship statements, model description and evaluation of the model (Chinn & Kramer, 2015). However, the main emphasis in the current chapter will be on concept analysis. Detailed discussions regarding the description and evaluation of the model for facilitating men’s sexual health are reserved for Chapter 10. The concepts used to develop a supportive care model for men’s sexual health were derived by integrating (i) patients’ experiences after diagnosis and treatment of prostate cancer; (ii) their experiences of SCMSH in oncology settings; and (iii) perspectives of RTTs on their role in facilitating SCMSH for patients undergoing radiotherapy for prostate cancer. Using an abductive theory generation lens during data analysis enabled the ideation of a model to support oncology health professionals in facilitating SCMSH in patients receiving radiotherapy for prostate cancer. Figure 8.1 is a conceptual model framework underpinning the thought processes behind creating the model for the current study.

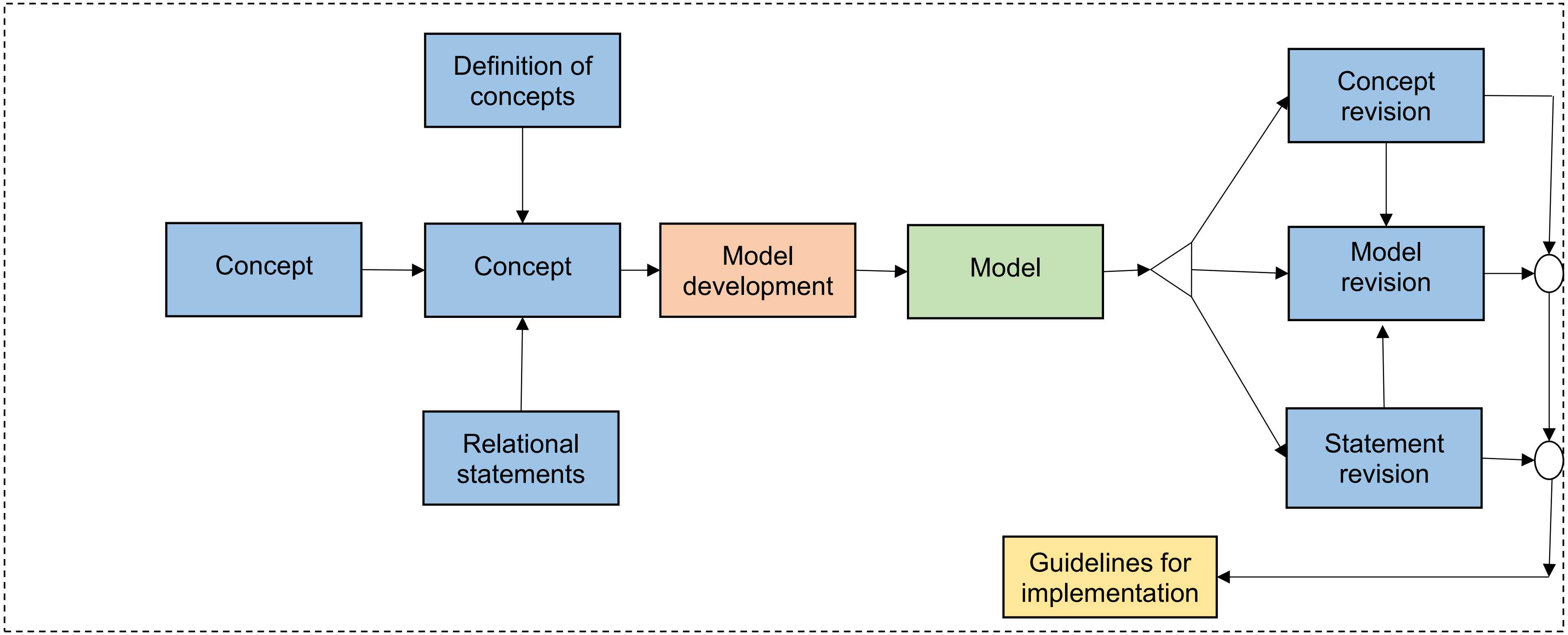

Figure 8.1: A conceptual framework of the model development process

## 8.4 CONCEPT ANALYSIS

Concepts are the building blocks of theory and model development (Walker & Avant, 2011). Concept analysis combines disparate data or observations into something new and gives it a name that makes it possible to communicate clearly (Walker & Avant, 2019). Berenskoetter (2017), Delves-Yates et al., (2018) and Knafl and Deatrick (1986) describe it as a method of examining and clarifying the meaning of concepts of interest to ascertain their attributes in a predefined context. Walker and Avant (2014) assert that concept analysis is required to analyse concepts' semantic structures and functions, which leads to a precise operational definition that will guide theory development. To comprehend an idea within a specific context better, it is necessary to thoroughly examine its meaning, prepositions and components.

The abductive reasoning approach was used to conduct concept analysis, which involved alternating qualitative and quantitative data to pinpoint key concepts from the research findings. In the present study, concept analysis involved identifying and classifying concepts from empirical findings and defining the central concept underlying a model to facilitate SCMSH (Foley & Davis, 2017).

### 8.4.1 Concept identification

Concepts are mental images of phenomena that help organise or categorise environmental stimuli (Walker & Avant, 2005). A concept is a term, phrase or idea associated with the phenomena being studied, which is used to theorise or build a model based on research findings to support claims made by the researcher. This study claims that RTTs, due to their frequent patient interactions, are well placed to provide SCMSH during radiotherapy for prostate cancer. The exploratory sequential mixed method research design contributed to concept analysis by delivering research findings on the studied phenomenon from diverse viewpoints. The data collection methods used necessitated the identification of relevant concepts; these methods were interviews with patients treated for prostate cancer to examine their experiences in Phase 1 and paper-based questionnaires to RTTs to explore their opinions on facilitating SCMSH as part of routine care for patients with prostate cancer in Phase 2. Phase 1 was a qualitative study that explored how patients experienced supportive care and facilitation of sexual health counselling in radiation oncology provided by oncology health professionals.

The four main themes that I identified from Phase 1 were (1) experiences of men after treatment of prostate cancer; (2) sexual lives of men after prostate cancer treatment; (3) treatment interventions for erectile dysfunction; and (4) facilitation of supportive care for men's sexual health (see Table 5.1). These themes were found to link well with the development of a supportive care model for men's sexual health in oncology settings. Phase 2 findings suggest that RTTs often avoid initiating dialogue about sexual health with male patients for reasons related to training, education, personal factors and scope of practice. I combined the results of Phase 1 and 2 in Chapter 7, using the chosen theoretical framework and the main thesis of the research as a guide. The objective was to determine a central idea to guide the development of a supportive care model to facilitate men's sexual health in patients treated for prostate cancer in oncology.

The model development was based on central concepts derived from the current study's findings achieved through inductive and deductive data analyses. These concepts include men's sexual health, sexual dysfunction, psychosocial support, low sexual activity, supportive care, barriers, sexual health, patient counselling, couple counselling, resource availability, unpreparedness of RTTs, sexual health support, support services, multidisciplinary collaboration, scope of practice, academic and professional development, knowledge, training and self-confidence.

### 8.4.2 Definition of central concept

A concept is defined as an abstract idea (Gray et al., 2016), and a conceptual definition explains the meaning of the idea. The central concept identified from the reflection on the findings was "facilitation of SCMSH". In this statement, the sub-concepts were facilitation, supportive care, and male sexual health. To define the subconcepts of the central concept for conceptual clarity, I used dictionaries and scholarly sources available to me at the time of this study. To define segments of the central concept, I used online dictionaries accessible to me while conducting this study.

#### *8.4.2.1 Lexicon definition of facilitation as concept*

Facilitation is a "means of helping forwards" (Oxford University Press, 1989). The Concise Oxford Dictionary describes facilitation as "a skill used to make tasks easy, less difficult, and more easily achievable" (Fowler & Fowler, 1990). *Bartlett's Roget's Thesaurus* (1996) includes concepts such as finding/making meaning, making comprehensible, setting free, making easy and possible, and simple, accessible, and relevant. Collins Dictionary (2024) defines facilitation as an action or process, especially one that you would like to happen, which means to make it easier or more likely to happen. According to Merriam-Webster (2022), facilitation is an action that increases the likelihood, strength or effectiveness of (as behaviour or a response). WorldWeb (2024) describes this concept as the condition of being made easy (or easier) or the act of assisting or making it easier to progress or improve something. The verb facilitate is synonymous with assist, aid, enable, ease, promote, expedite, support, simplify, propel, encourage, accelerate, smooth, collaborate, streamline and help, empower (Collins Dictionary, 2024; Merriam-Webster, 2022).

#### *8.4.2.2 Subject definition of facilitation as concept*

The spectrum of facilitation is broad, ranging from creating a space in which everybody can have their say to facilitating processes where people can "face and take on board the unknown, through letting go of old knowledge, habits or ways of seeing … to step over existing boundaries, entering and transcending the threshold of change" (Soal, 2004: 55). Facilitation is a process in which participants should be actively involved and, at the very least, be allowed to "mull over the information" to process it mentally, to make it their own for self-growth and self-development (Schenck & Louw, 2014). The terminus of this concept is the development of self and others. Doing so involves more than providing knowledge and skills or increasing access to resources – it is an internal transformation or development process through which self-worth increases (Nturibi, 1984).

Henwood and Taket (2008) define facilitation as activities that assist an individual radiographer to participate in an activity. In nursing, the ability to create a comfortable climate gives patients time and space to self-actualise (Cilliers & Terblanche, 2000). Cross (1996) states that facilitation is a process that enables change. In psychology, facilitation is defined as a process of “the stimulating effect on a person’s behaviour of other people, even the mere presence of other people” (Statt, 1981).

In this study, facilitation refers to the coordinated actions of an oncology health professional working together with other healthcare professionals to provide SCMSH in the oncology environment. The objective is to establish a space where male patients feel comfortable discussing their sexual health concerns and enable them to actively participate in receiving supportive care and ultimately achieving a sense of overall sexual well-being. To me, a facilitator, as a noun, refers to an oncology health professional who streamlines and improves a process or activity, making it more efficient, assisting in problem-solving and ensuring the smooth execution of tasks to achieve the desired outcome. This involves creating an environment that fosters collaboration and communication and enables effective decision-making.

Drawing on both dictionary and discipline-specific definitions, I identified the core and related attributes that constitute the concept of facilitation. The essential and related attributes are presented in Table 8.1.

**Table 8.1: Essential and related attributes for facilitation**

| Essential attributes | Related attributes |
|---|---|
| Help | To make easier |
| | Assist |
| | Support |
| | Enable |
| | Facilitate |
| Process | Improvement |
| | Dynamic |
| | Goal-oriented |
| | Empowering |
| | Collaboration |

#### *8.4.2.3 Lexicon definition of supportive care as concept*

Supportive is described as providing sympathy or encouragement, offering additional help and information, among other things (Collins Dictionary, 2024). Being supportive implies being kind and helpful to someone during a difficult or unhappy time in their life (Collins Dictionary, 2024). The concept of supportive involves actively helping someone in need (Cambridge English Dictionary, 2023). Supportive refers to the act of providing help, encouragement or care to someone, by assisting them to achieve a specific goal or dealing with a particular situation (OpenAI, 2024). Furnishing support or assistance is another way to describe being supportive (WordNet, 2024). Giving support and providing sympathy or encouragement is also encompassed in the definition (Dictionary.com, 2023). In medicine, supportive refers to maintaining an average physiological balance, such as the intravenous administration of essential nutrients (WordReference.com, 2024).

Care means paying serious attention, especially to the details of a situation or thing (Cambridge Dictionary, 2023). The Cambridge Dictionary (2023) defines “to care” as a verb signifying being concerned or solicitous, having thought or regard. Merriam-Webster (2022) defines care as a feeling of interest or concern. Perceiving something as essential and concerning is the essence of caring about it (Collins Dictionary, 2024).

#### *8.4.2.4 Subject definition of supportive care as a concept*

Supportive care refers to the provision of needed support to those living with or affected by cancer to meet their informational, emotional, spiritual, social and physical needs during their diagnosis, treatment and follow-up phases (Hui, 2014). Supportive care in the case of cancer involves the prevention and management of adverse effects of cancer and its treatment (Multinational Association of Supportive Care in Cancer, 2023). The generic definition underpins the development of services and provides a basis for disease-specific care approaches (Cramp & Bennett, 2013).

In this context, supportive care refers to taking care of the sexual health of men facing sexual health challenges, such as erectile dysfunction, during and after radiotherapy for prostate cancer in the oncology setting. This form of support involves sharing information and providing patients with additional mental, emotional, spiritual, social and physical support while respecting their values and beliefs. Therefore, I define SCMSH as a dynamic interplay among the capabilities (psychological, cognitive, physical and skills-based), opportunities (social-societal influence, physical-environmental resources), and motivations (automatic, emotional, reflective and beliefs about capabilities) of oncology health professionals, as posited by the COM-B model (Michie et al., 2011; Michie & West, 2015). The essential and related features (attributes) of the concept of supportive care are listed in Table 8.2.

**Table 8.2: Essential and related attributes for "supportive care"**

| Essential attributes | Related attributes |
|---|---|
| Help | Support |
| | Kind |
| | Caring |
| | Encouragement |
| | Prevention |

### *8.4.2.5 Lexicon definition of men's sexual health as concept*

To define men's sexual health, the concept was divided into three subconcepts: men, sexual, and health. In Cambridge Dictionary (2023), men are defined as belonging to or related to the male gender. Man is an individual human being, particularly an adult male (Merriam-Webster, 2023). Sexual denotes sexual relationship, "the intimate (or sexual) relations between husband and wife" (Free Dictionary, 2023). The adjective sexual is related to the instincts, physiological processes and activities connected with physical attraction or intimate physical contact between individuals (Bab.la, 2023). Health refers to well-being, also known as wellness, prudential value, prosperity and quality of life (Wikipedia, 2023). It encompasses physical, mental and social aspects with specific reference to reproductive and sexual functions – soundness of the body or mind and freedom from disease or ailments (Dictionary.com, 2023; Merriam-Webster, 2016).

### *8.4.2.6 Subject definition of men's sexual health as concept*

The term men, in this study, refers to patients diagnosed and treated for prostate cancer in the radiation oncology department in the Gauteng province, who were the research participants. Sexual health is a state of physical, emotional, mental and social well-being concerning sexuality; it is not merely the absence of disease, dysfunction or infirmity (World Health Organization, 2006). Sexual health refers to a state of well-being that enables men to fully participate in sexual activities. Physical, psychological, interpersonal and social factors influence men's sexual health (Harvard Medical

School, 2024). Therefore, men’s sexual health is defined as their general well-being regarding sexual function, performance, and satisfaction (OpenAI, 2024; Yale Medicine, 2024). It is not merely the absence of the disease but encompasses a range of factors, such as libido, erectile function, ejaculation, and reproductive health. Maintaining good male sexual health involves physical, emotional, and mental well-being (Harvard Medical School, 2024; Krause, 2007; Yale Medicine, 2024). The essential and related features (attributes) of the concept of men’s sexual health are listed in Table 8.3.

**Table 8.3: Essential and related attributes for “men’s sexual health”**

| Essential attributes | Related attributes |
|---|---|
| Men’s sexual health | Men’s libido |
| | Men’s sexual function |
| | Ejaculation |
| | Reproductive health |
| | Sexual pleasure |
| | Sexual performance |

## 8.5 CONCEPT CLASSIFICATION

The main concepts and subconcepts identified from the research findings (see Figure 8.2) were classified according to the six factors of practice-oriented theory by Dickoff et al., (1968). The six factors of practice-oriented theory discuss the roles of the agent, recipients, context, procedure, dynamics and terminus, which were adapted to the context of this study. Discussion of these factors helped me conceptualise the model and understand the relationships between these factors of practice-oriented theory when applied in the context of this model. My conceptual mapping of the model was drawn from the survey list developed by Dickoff et al., (1968) to illustrate how key concepts were classified, as shown in Figures 8.2 and 8.3. These figures represent the conceptual mapping of a model that facilitates SCMSH, which will be presented in Chapter 9.

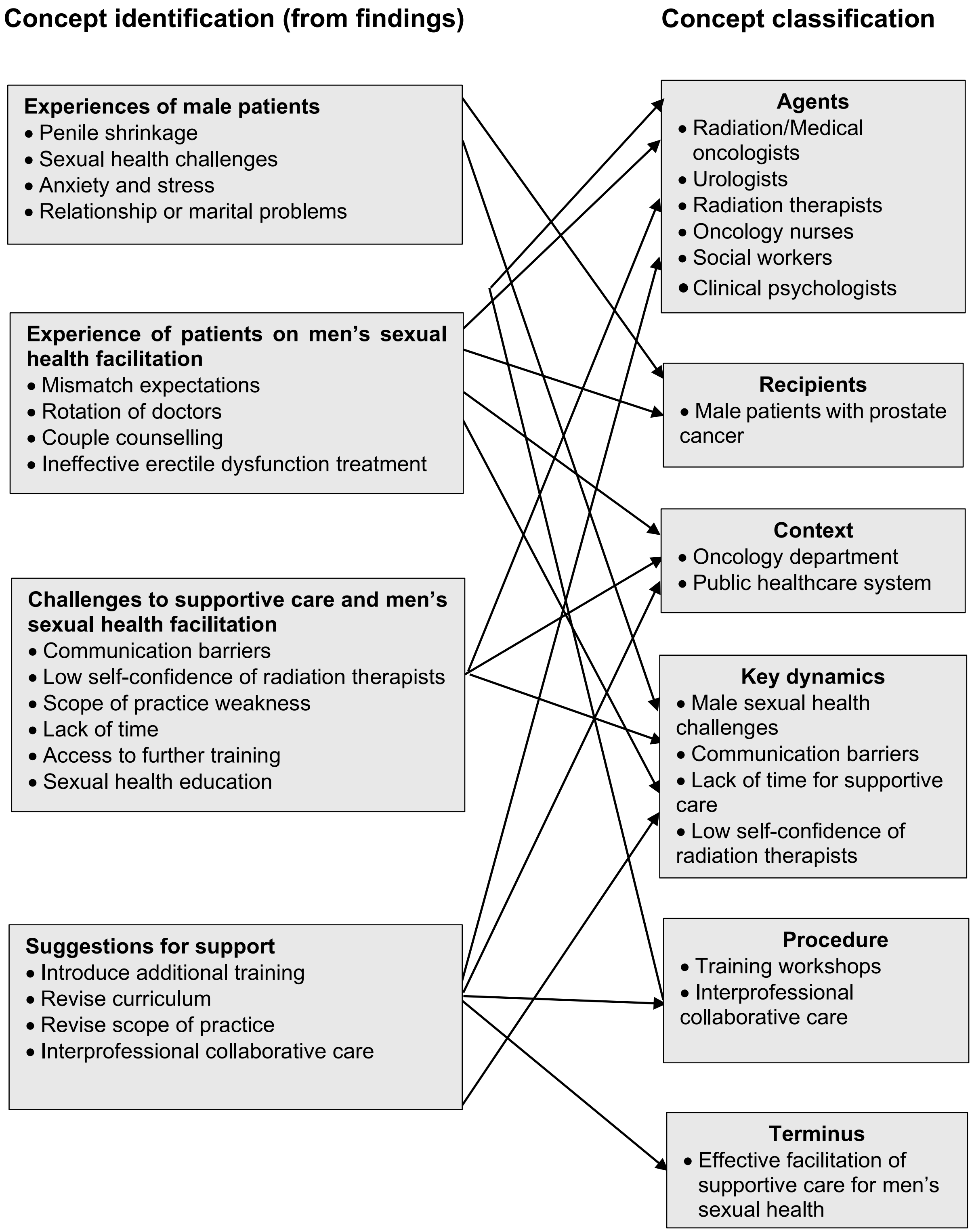

**Figure 8.2**: **Classification and interlinking of concepts according to Dickoff's theory (1968)**

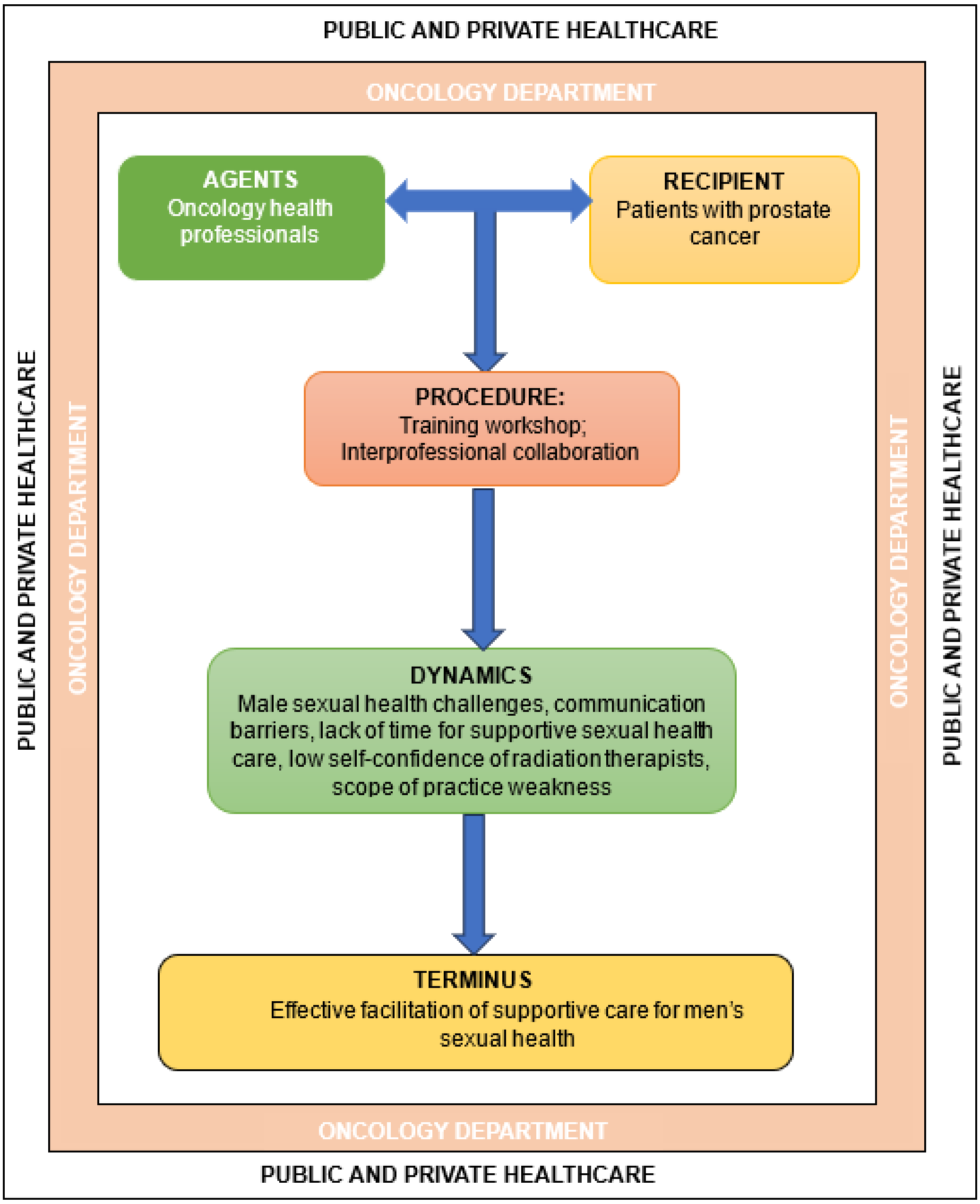

**Figure 8.3: Conceptual mapping of a model to facilitate SCMSH**

### a) Agent – Who or what performs the activity?

Dickoff et al., (1968) explain that an agent or facilitator plays a role in facilitating an activity. In this model, the onus of facilitating SCMSH during cancer diagnosis and treatment falls on oncology health professionals involved in the process. These oncology health professionals include radiation oncologists, medical oncologists, urologists, RTTs and oncology nurses, as shown in Figure 8.3. Other agents or facilitators of this model may include other healthcare professionals, such as social workers or clinical psychologists. These agents often face barriers in providing supportive care to patients with sexual health problems in clinical settings (see Section 3.5 and Section 7.3.4). Nonetheless, I am hopeful that the collaborative practices of the healthcare professionals mentioned above can overcome barriers to SCMSH care in oncology.

### b) Recipient – Who or what is the recipient of the activity?

The recipient receives actions at the terminus of the activity that the agent implements (Dickoff et al., 1968). The recipient is one or more person(s) who will benefit from facilitating SCMSH. In this model, the recipient is a patient treated for prostate cancer in oncology settings. The choice of the recipient in this model is on the basis that a man grappling with erectile dysfunction may withdraw from his partner and opt to steer clear of intimacy altogether because of the anxiety of potential disappointment in the bedroom (see Section 7.3.1).

### c) Context – In what context is an activity performed?

The first inner context of the model is oncology departments, either radiation oncology or medical oncology, where cancer treatment and support services are provided to patients with prostate cancer and their affected families. The second outer context relates to South Africa’s public health sector, which provides and maintains resources such as equipment, cancer treatment drugs and facilities. Figure 8.3 shows a clear schematic representation of the two contexts in which this model is applicable.

### d) Procedure – What procedure guides the activity?

What techniques, procedures, guidelines, and protocols are associated with a model of sexual health support for male patients? Dickoff et al., (1968) are of the view that the procedure is the path, steps, or general patterns that lead to achieving a goal. The provision of supportive care to men’s sexual health by oncology health professionals necessitates the practice of interprofessional collaboration, consistent with the prescriptions of the Health Professions Council of South Africa, which is the body that regulates health professionals’ behaviour and scope of practice. Professional bodies have set the scope of practice to ensure responsible practices by health professionals and the quality of healthcare services (Health Professions Council of South Africa, 2008, 2021; Leslie et al., 2021). Therefore, these professional bodies have the authority to empower oncology health professionals, including RTTs, to broaden their roles in supportive oncology care.

#### e) Dynamic – What is the energy source for an activity?

The dynamic is the energy source (motivation) behind the activity, involving the agent, recipient and context. Dickoff et al., (1968) describe it as either “chemical, physical, biological, or psychological”. The main driving force behind the development of the model to support men’s sexual health in this study was the absence of well-coordinated supportive care for sexual health in male patients with erectile dysfunction. Men’s sexual health issues impact the mental, physical, emotional and spiritual well-being of male patients with prostate cancer, leading to worse quality of life after cancer, and these issues are therefore classified as a source of energy for this model. In turn, RTTs tend to avoid bringing up sexual health issues during their daily interactions with patients receiving radiotherapy because they are not comfortable doing so (see Section 7.3.2.3). This avoidance adds to the challenges of well-coordinated SCMSH in oncology. The attitudes of healthcare professionals towards holding conversations about sexual health issues are influenced by their knowledge, skills, gender, religious and cultural beliefs, personal values and morals and the context in which they find themselves (Gott et al., 2004; Munyai et al., 2023; Phahlamohlaka & Mdletshe, 2022). In particular, RTTs seemed uncertain about whether to address sexual health issues during patient counselling because of uncertainty about their scope of practice relating to the subject matter.

#### f) Terminus – What is the endpoint of the activity?

The term terminus describes the point at which a model is implemented to facilitate SCMSH in oncology settings. Therefore, the anticipated terminus of this model improves the facilitation of support for men's sexual health in oncology patients receiving radiotherapy for prostate cancer.

## 8.6 SUMMARY

This chapter introduced a concept analysis, model development process and conceptual mapping framework to support the development of a model for SCMSH in this study. Definitions of the central concept, "facilitation of supportive care for men's sexual health" and subconcepts were identified and defined using dictionaries and literature sources. Essential and related attributes were identified and linked to central concepts. The concepts were then classified according to the six factors of the practice-oriented theory proposed by Dickoff et al., (1968). These factors helped organise the concepts into understandable components, which was necessary for the development of a model to facilitate SCMSH. The conceptual framework presented in this chapter guided the development of a model to facilitate SCMSH.

# CHAPTER 9

# A MODEL TO FACILITATE SUPPORTIVE CARE FOR MEN'S SEXUAL HEALTH

*Theory without practice is empty; practice without theory is blind.*

Harold Anthony Lloyd

## 9.1 INTRODUCTION

Chapter 9 will build on Chapter 8 (Phase 3), concept analysis, to define and give meaning to key constructs/concepts derived from research findings of the present study that underscore the development of a model to facilitate SCMSH. Therefore, the objective of this chapter is to develop a model to facilitate SCMSH in patients receiving radiotherapy for prostate cancer in oncology settings. This chapter will present an overview of the model, model description, relationship statements, evaluation of the model, and guidelines for operationalising it.

## 9.2 OVERVIEW OF THE MODEL

An overview of the model is based on the model shown in Figure 9.1. The conceptual map presented in Figure 8.3 highlights the development of structural model components. The model shows the interaction between the facilitator (oncology health professional) and the recipient (male patient) as they work towards improving SCMSH in oncology facilities. Section 8.5, paragraph a), introduces radiation oncologists, medical oncologists, RTTs and oncology nurses as agents or facilitators in this model. Other facilitators may include healthcare professionals such as social workers and clinical psychologists. Male patients are beneficiaries (recipients) of this model, as described in Chapter 8. The model process to facilitate SCMSH involves initiation, working, and reflection phases.

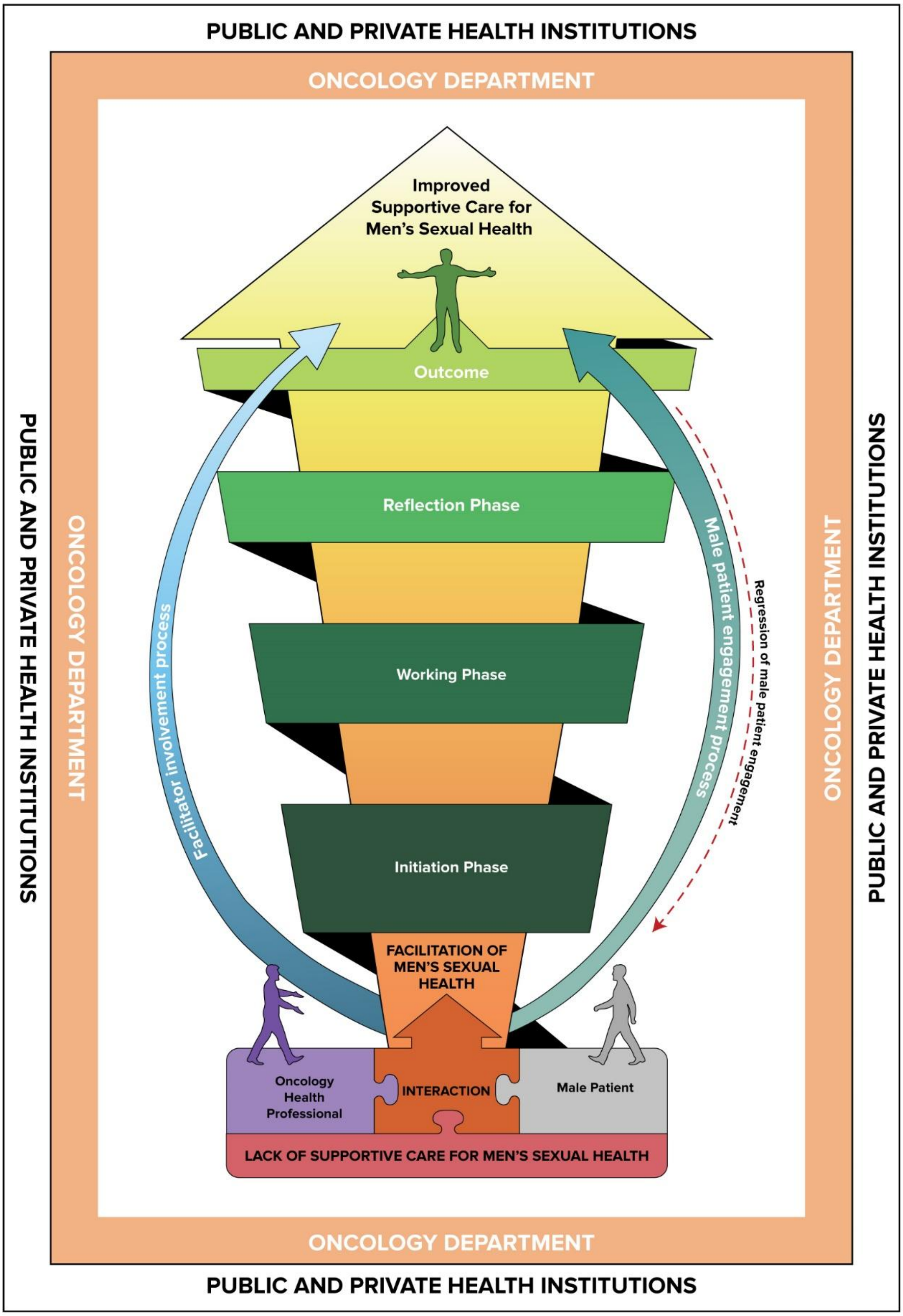

**Figure 9.1: Model to facilitate SCMSH**

## 9.3 DESCRIPTION OF THE MODEL

A model for facilitating SCMSH in male patients receiving cancer treatment in oncology settings is described in terms of (1) purpose; (2) context clarification; (3) assumptions; (4) theoretical concept definitions; (5) relationship statements; (6) description of model components; and (7) model processes (Chinn & Kramer, 1999, 2011, 2013, 2015).

### 9.3.1 Purpose

This model provides a conceptual framework to encourage RTTs to be involved in facilitating sexual health in patients receiving radiotherapy for prostate cancer. It makes it possible for RTTs to collaborate with other oncology health professionals in addressing sexual health problems of patients with prostate cancer. This model aims to drive changes in advancing SCMSH for patients receiving treatment for prostate cancer in oncology, ultimately improving men’s quality of life, not just prolonging the life expectancy of these patients after treatment.

### 9.3.2 Context clarification

Context is necessary for a theory to be practical (Chinn et al., 2022). The model presented in this chapter was formulated from the perspective of the oncology department at public healthcare in the Gauteng province, South Africa. This department specialises in the delivery of cancer treatment and is staffed by oncology health professionals dedicated to caring for patients with cancer.

### 9.3.3 Assumptions

The assumptions of this model are based on the COM-B model. The COM-B behaviour model posits that behaviour occurs as an interaction between Capability, Opportunity, and Motivation (Michie, 2014; Michie et al., 2011; Michie & West, 2015) (see Section 2.3), with emphasis on oncology health professionals towards facilitating sexual health in oncology. Additionally, the assumptions of this model are embedded in the whole-person care model and the theory for health promotion in nursing, as described in Section 2.6 (Department of Nursing Science, 2019; Thornton, 2005), to maintain wholeness in patients with prostate cancer and facing erectile function challenges or undergoing radiotherapy. The assumptions of this model are described in terms of the following concepts: the internal and external environments of a male patient, oncology health professionals as facilitators, male patients as recipients and SCMSH.

### *9.3.3.1 Internal and external environments of a male patient*

In this model, a patient with prostate cancer is considered a whole person with both internal and external environments. A person's wholeness is the state of balance within a person's internal environment, consisting of the body (anatomical and physiological changes), mind (emotions and attitudes) and spirit (beliefs), working in an integrated manner with the external environment (Department of Nursing Science, 2019). The internal environment of these patients works in an integrated manner with the external environment, comprising physical (oncology department and resources) and social (family, spouse, friends, fellow patients, and oncology health professionals) aspects with which the male patient interacts (see Section 2.2). Therefore, it is assumed that male patients face communication barriers influenced by both internal and external environments when they have to openly discuss their sexual health issues with oncology health professionals (Park et al., 2009; Phahlamohlaka & Mdletshe, 2022).

### *9.3.3.2 The male patient (recipient)*

In this model, a male patient represents an individual with impaired erectile function after the diagnosis of prostate cancer and radiotherapy for the disease. After prostate cancer treatment, these men undergo physiological, physical and psychosocial changes, including reduced libido, anorgasmia, penile shrinkage, decreased sexual activity in intimate relationships and masculinity challenges (see Sections 7.3.1 and 7.6). A male patient is assumed to be a whole person with a multidimensional being consisting of an internal and external environment disrupted by cancer diagnosis and treatment (Jasemi et al., 2017; Sakallaris et al., 2015).

### *9.3.3.3 The oncology health professional (facilitator)*

The current model assumes that the facilitator is a registered oncology health professional with experience in caring for patients treated for prostate cancer. The facilitator in this model can be either male or female but needs to be a mature, trained and professionally experienced person with a stable internal environment to aid male patients to achieve wholeness. Therefore, it is assumed that providing RTTs with the opportunity for further training workshops could change their attitudes towards discussing sexual health with patients receiving radiotherapy for prostate cancer (see Section 6.3.4.1). Communication regarding sexual health between healthcare professionals and patients is reciprocal, meaning that the flow of communication depends on the patient asking relevant questions and the healthcare professional probing the patient with them (Politi et al., 2009).

#### *9.3.3.4 Supportive care for men's sexual health*

In the context of this model, the act of facilitating SCMSH is considered an expression of care, awareness, understanding and concern about sexual health issues facing men receiving radiotherapy for prostate cancer. In this model, a caring oncology health professional is an individual who considers sexual health as part of patient counselling of patients with cancer. In this model, it is assumed that the male patient receiving radiotherapy for prostate cancer does not receive effective male sexual health supportive care from oncology health professionals, including RTTs (Section 7.3.2). SCMSH involves maintaining whole-person care in a male patient, as described in Section 9.3.3, to balance his disturbed internal environment.

### 9.3.4 Definitions of theoretical concepts

Concepts identify and convey the meaning of a theory; therefore, explicit definitions are required to understand the theory (Chinn et al., 2022). The central concepts were classified through the survey list of Dickoff et al., (1968). The theoretical concept definitions for this model are defined in terms of the subject definitions of the central concepts through the lens of concept analysis described in Chapter 8. The concepts that aided the theoretical construction of this model include facilitation, supportive care and men's sexual health (see Section 8.4.2).

### 9.3.5 Relationship statements

Dickoff's (1968) theory was used to classify concepts from the research findings, which were then organised into interrelated statements (Chinn & Kramer, 2015). The relationship statements formulated for this supportive care model to facilitate men's sexual health in oncology settings are given below:

- Oncology health professionals caring for patients with prostate cancer should be adequately equipped and resourceful to provide comprehensive supportive care for sexual health, encompassing psychosocial, emotional and informational support.
- Persistent barriers such as limited communication skills, low self-confidence, and uncertainty about the scope of practice seem to hinder active involvement of RTTs in facilitating sexual health support with patients, warranting attention.
- An oncology department characterised by high clinical workloads, patients may receive inconsistent or inadequate sexual health counselling, warranting RTTs to play an active role in sexual health counselling to deal with the practical realities of oncology care.
- To strengthen RTTs' involvement in facilitating SCMSH, implementing targeted sexual health training workshops is vital for promoting cohesive, interprofessional collaboration among oncology health professionals.

### 9.3.6 Description of model components

The components of this model stem from the interrelationships between the concepts classified in Figure 8.1 (see Section 8.5). Structural components of the model include the use of figurines symbolising oncology health professionals and male patients, as well as the use of different colours and symbols to describe emotions, behaviours and actions associated with specific colour psychology to the phenomenon under study and its context (see Figure 9.1) (Alvi, 2017; Elliot, 2015; Learn Laugh Speak, 2024). The structural components of this model are interconnected, although they are discussed separately. The outer and inner borders of the model depict these two contexts. The bottom puzzle piece connected to the upward arrow signifies the issue of the absence of SCMSH that requires attention, and which forms the basis of this model. The figurine at the bottom left-hand corner represents the oncology health professional (facilitator). The figurine on the right at the base of the model reflects a male patient. A zigzag pattern loop around an upward-pointing arrow, illustrates the initiation, working and reflection phases of the process. The central arrow widens from the bottom-up transition from orange to yellow in colour, indicating the progression of facilitation of men's sexual health. The tip of the broad arrowhead has a green figurine that symbolises a new beginning and hope for male patients after radiotherapy for prostate cancer. On both sides of the model, curved arrows represent the facilitator's involvement process on the left, and the male patient's engagement process on the right. In Section 9.3.6.1, I explain the individual components of the model to make them clearer and more accessible.

#### *9.3.6.1 Model context*

Figure 9.2 elaborates on the context of the model by delineating the environments in which this particular model can be employed or utilised effectively. This model applies to the oncology departments in both public and private health institutions. The outer white frame with square borders represents the context of public and private healthcare facilities, as these contexts are part of this conceptual model. The inner frame represents the oncology department at the public and private institutions where men's sexual health support should be offered to patients receiving radiotherapy for prostate cancer (see Figure 9.2 and Section 9.3.2).

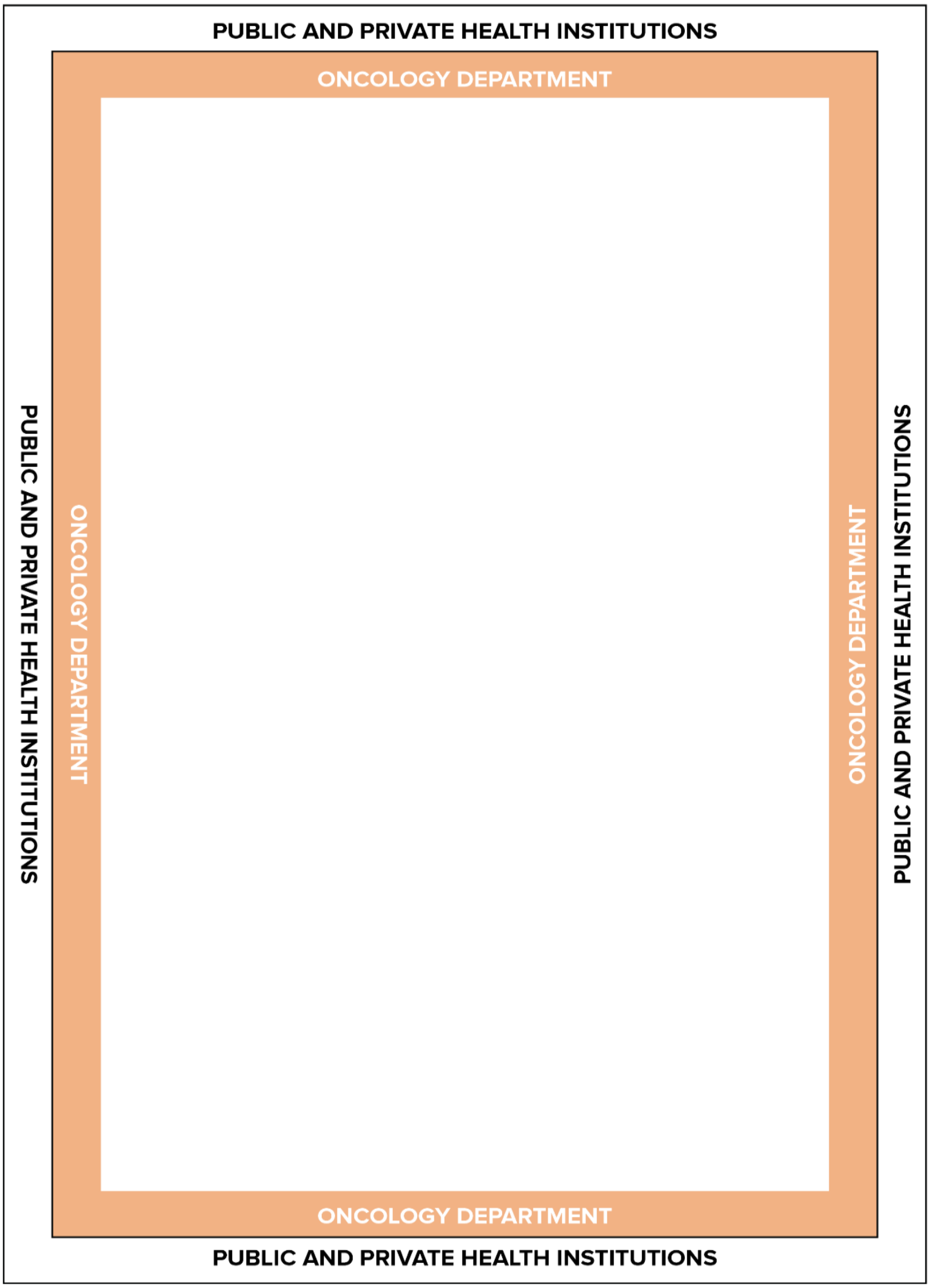

**Figure 9.2: Context of the model**

Square borders are used to simply demarcate the two contexts of this model, namely, the oncology departments at public and private health institutions. I chose light orange for the inner frame for the oncology department because it symbolises a warm, conducive space for male patients to interact with oncology health professionals to discuss their sexual health issues (Lawrence, 2012). The outer white border and its white background symbolise the healthcare setting and evokes strong associations with purity, cleanliness and sterility (Alvi, 2017).

#### *9.3.6.2 Problem identification*

**Figure 9.3: Lack of SCMSH**

The base of the model is a red puzzle piece connected to an upward arrow (see Figure 9.3). This section of the model represents the problem of a lack of SCMSH in oncology settings. To me, red symbolises the stimulus for the lack of SCMSH and draws attention ( Smith, 2010).

#### *9.3.6.3 The facilitator as an oncology health professional*

**Figure 9.4: The facilitator (oncology health professional)**

The lower aspect of the model has a violet figurine on the left-hand side, representing the facilitator, as shown in Figure 9.4. This facilitator is interested in guiding male patients in developing internal balance to navigate the emotional challenges associated with erectile function issues in patients following radiotherapy for prostate cancer. The open arms of a facilitator reaching out to a male patient demonstrate confidence and commitment in the course of offering care for men's sexual health. The violet colour signifies being supportive, inspiring, motivating and uplifting (McLeod, 2016). The facilitator can be any oncology health professional who can empathise with men’s sexual health issues and does not necessarily have to be a male person.

#### *9.3.6.4 The male patient as a recipient*

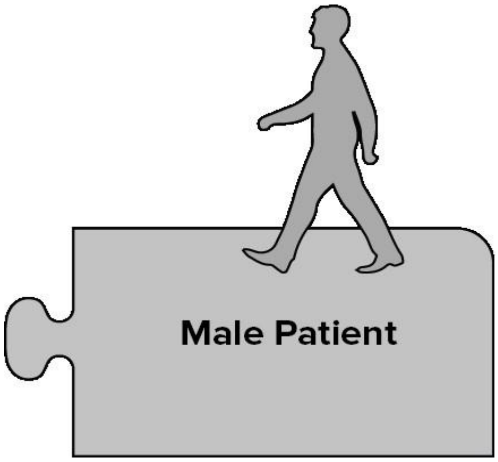

**Figure 9.5: The male patient (recipient)**

At the bottom of the model, a grey figurine on the right side symbolises the male patient (recipient) (see Figure 9.5). The colour grey is used deliberately, as it is associated with negative emotions such as anxiety, depression and stress (Learn Laugh Speak, 2024). This choice reflects the emotional state of a man experiencing erectile dysfunction before starting interaction with a facilitator. For me, this colour captures the sentiments of loneliness and sexual detachment of patients undergoing or having undergone treatment for prostate cancer, as detailed in Chapter 7. Given the negative effect of erectile dysfunction on emotional and mental health, it is assumed that the male patient experiences an unstable internal environment (see Section 5.3.1.1).

### *9.3.6.5 The facilitator interacting with a male patient to address the problem*

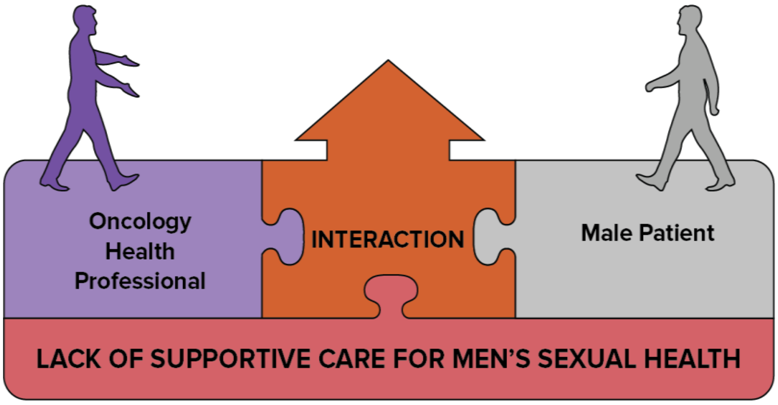

**Figure 9.6: Interaction between the oncology health professional and male patient**

The centre of the bottom of the model is a dark orange centre puzzle piece depicting an opportunity for two-way communication between a facilitator and a male patient on men's sexual health issues in the oncology department. Orange signifies a facilitator's energy, warmth, and enthusiasm (Smith, 2010). The facilitator gradually uses their energy, warmth, and enthusiasm to care for men's sexual health. The bottom part of this model corresponds to the initiation phase, when the oncology health professional interacts with male patients; this will be discussed in detail in Section 9.3.6.9 a). How these puzzle pieces are connected, as shown in Figure 9.6, indicates that the oncology health professional who approaches male patients is aware of the lack of SCMSH facing male patients who have received or have completed radiotherapy for prostate cancer in oncology settings coming in their direction. The small outgoing orange arrow that is connected to the centre and facing upward within the widening orange-yellow arrow signifies the early stage of the initiation phase in facilitating men's sexual health as oncology health professional and male patients engage for the first time.

### 9.3.6.6 *The facilitator's involvement process*

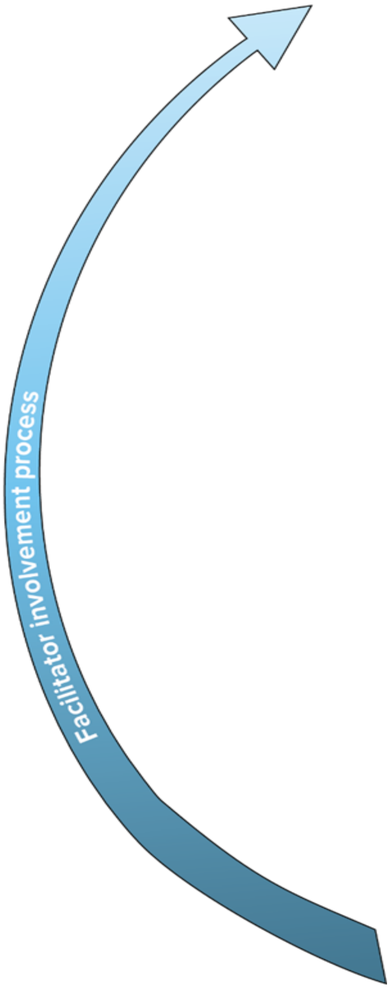

**Figure 9.7: The facilitator's involvement process**

On the bottom left side of the upper centre arrow is a blue upward curving arrow with a broad base that gradually becomes thinner toward its arrow end (see Figure 9.7). The tapering nature of the blue arrow and the transition from dark blue to light blue towards the arrowhead represents the intensity of facilitator involvement throughout the model process. The process is blue because it conveys a message of reliability, security and trustworthiness in facilitating SCMSH. Patients seek these qualities when they seek help from health care professionals (Alvi, 2017; Learn Laugh Speak, 2024). Therefore, this colour was chosen to alleviate stress and to promote well-being in male patients living with erectile function challenges during and after radiotherapy for prostate cancer. Section 9.3.6.7 explains the facilitator's involvement process by examining the tapering design of a blue arrow as it shifts from dark to light blue, narrowing toward the arrowhead, and its correlation with the three model phases.

### *9.3.6.7 The male patient’s engagement process*

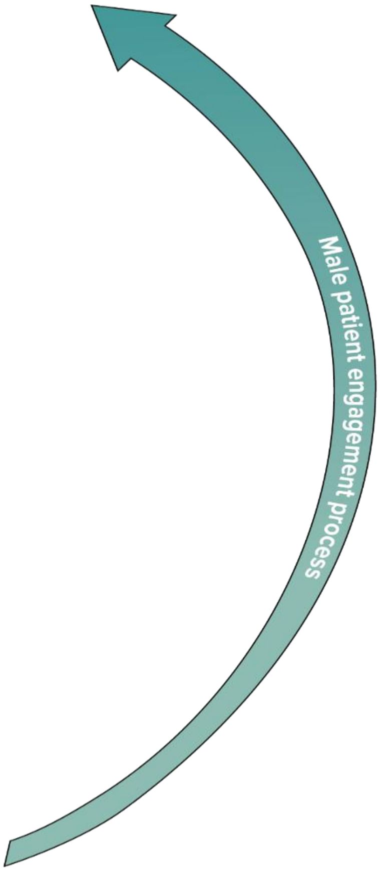

**Figure 9.8: The male patient’s engagement process**

On the lower right side of the upper centre arrow is the narrow blue-green (teal) arrow that curves upward with a wider endpoint, which symbolises the improved experience of male patients regarding SCMSH (see Figures 9.1 and 9.8). The intensity of the blue-green changes as the curve widens from the base to the arrowhead. This indicates the extent to which the male patient is engaged in and responsive to SCMSH facilitated by oncology health professionals. As the patient receives sexual health support, the widening arrow suggests that the patient develops stability in the internal environment during the initiation, working and reflection phases. The choice of this colour is based on its calming effect on the body and mind, which helps reduce stress and promotes relaxation in male patients. This enhances mental clarity and concentration, boosts mood and fosters positivity (Alvi, 2017; Learn Laugh Speak, 2024). Section 6.3.6.8 provides a description of the facilitation of men’s sexual health.

#### *9.3.6.8 Facilitation of men’s sexual health*

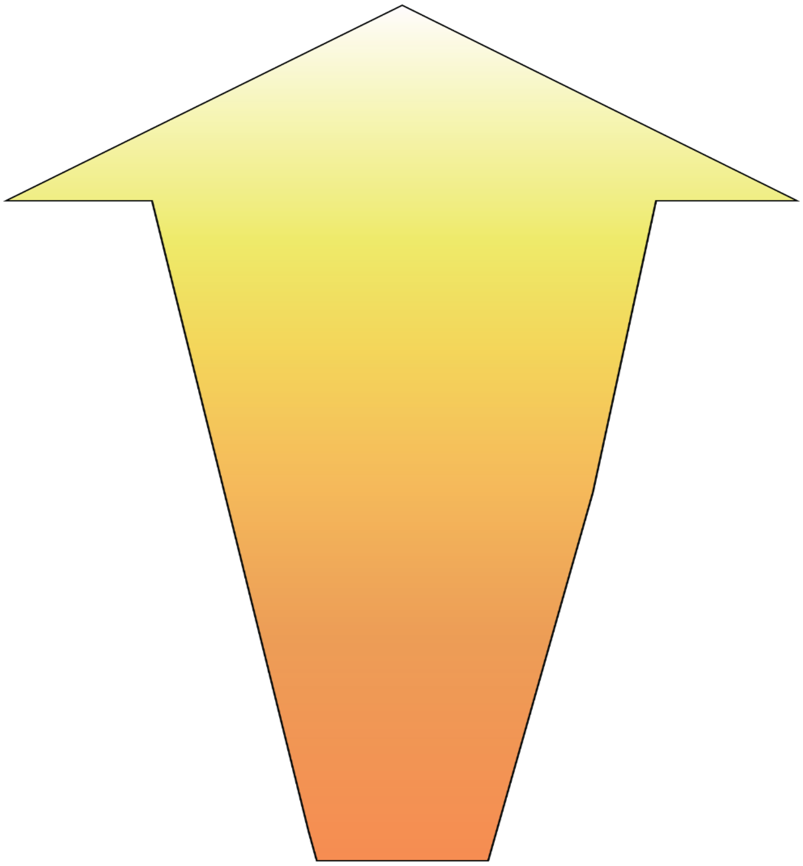

**Figure 9.9: Facilitation of men’s sexual health**

The central upward orange-yellow arrow gradually widens to reflect a positive change in the facilitation of SCMSH in oncology (see Figure 9.9). In the context of this model, the medium orange colour used symbolises a warm, conducive space for male patients to interact with oncology health professionals and freely share their feelings about their experiences of living with erectile dysfunction (McLeod, 2016). For me, yellow symbolises new beginnings, hope, enlightenment and better outcomes for male patients who accept their current situation and look for alternative ways to live with erectile dysfunction (Smith, 2010). The ombre effect in the arrow – a blending of orange and yellow – indicates that facilitation takes place in a safe and encouraging environment and presents opportunities for new beginnings, hope and enlightenment to improve male sexual health in oncology. In addition, the widening arrow indicates the advancement of oncology health professionals’ capabilities to assist men with their sexual health in the cancer care continuum of oncology. The widened arrowhead indicates improved SCMSH as a result of the model process.

### 9.3.6.9 *The model process*

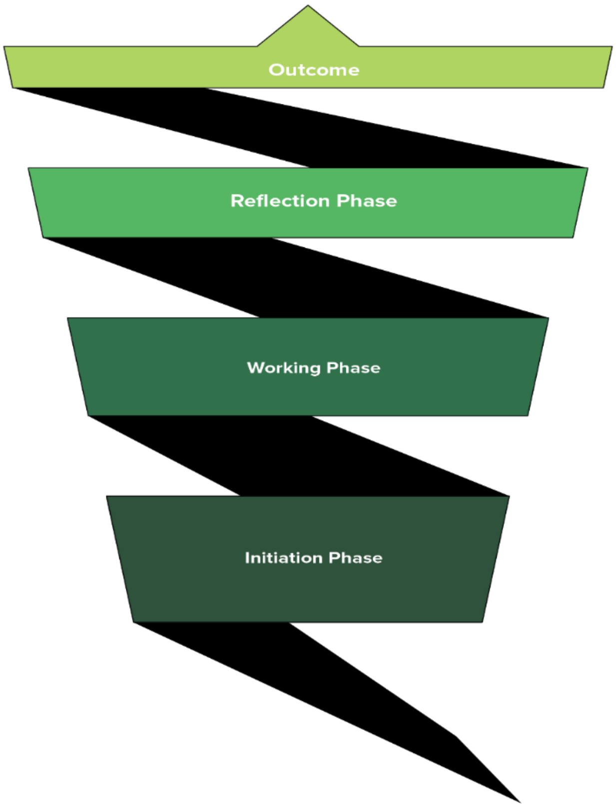

**Figure 9.10: The model process**

The model process for facilitating men’s sexual health support is intended to help patients find balance in their internal environments, especially in the dimension of the mind. Supporting men’s sexual health is assumed to improve their social quality of life as they accept new changes in their sexual lives following diagnosis and treatment for prostate cancer. These new changes in men’s sexual life are described in Section 5.3.1 of the present study. A green zigzag loop, intertwining an upward-pointing, widening orange-to-yellow arrow, illustrates the phases of facilitation of SCMSH, namely a) initiation phase (b) working phase, and c) reflection phase, as shown in Figures 9.1 and 9.10. During these phases, oncology health professionals and male patients interact in a coordinated manner, resulting in an outcome represented by a broadened arrowhead. Green is chosen not only for its aesthetic appeal but also for its positive impact on male patients’ emotional well-being; green represents physical, emotional and mental rejuvenation during episodes of distress about erectile dysfunction (Alvi, 2017; Cherry, 2023).

### a) The initiation phase

In this phase, the facilitator develops a therapeutic bond with the male patient. In Figure 9.10, a thin segment connects the initiation phase and the male figurine at the bottom left of the model. This implies that the oncology health professional should initiate dialogue with the patient rather than the patient taking the lead. This is the largest of the three phases because the facilitator takes ample time to build a therapeutic relationship with the patient. Facilitators should always acknowledge and value the patient's individuality throughout the process by consider their cultural backgrounds, personal experiences, values and beliefs. This phase ensures the facilitator and patient understand the issue and set actionable goals.

For this phase to succeed, the facilitator must establish a safe, trusting, and amicable environment with the patient. In addition, the facilitator needs to clarify the potential barriers that may hinder the facilitation of SCMSH issues between themself and the patient (Krouwel et al., 2019; O'Connor et al., 2019; Phahlamohlaka & Mdletshe, 2022). The dark green hue representing this phase indicates the effort and energy required by the facilitator to initiate SCMSH with new patients (see Figure 9.10).

As shown in Figures 9.1 and 9.6, the oncology health professional approaches a patient with open arms and extends their hands toward the patient. This shows the confidence and commitment of the oncology health professional to sexual health care in men with erectile function challenges. As a consequence, the facilitator builds a therapeutic relationship with the patient to make it possible for the patient to explore and share their experiences of living with erectile function challenges (see Section 5.3.1). Building trust and respectful relationships ensures commitment to interaction and men's sexual health is facilitated (Johnson, 2014). The figurine, portraying a male patient seeking supportive care for his sexual health concerns from the oncology health professional, symbolises someone experiencing low morale, stress, frustration and hopelessness. The use of a grey colour for this figurine embodies the challenging emotions faced by men undergoing prostate cancer treatment, as discussed in Section 5.3.1.1.

Figure 9.7 illustrates the facilitator's level of involvement, as indicated by the blue arrow, which has a broad base during the initiation phase. The curved arrow gradually becomes narrower as it passes through the working and reflection phases, thereby representing a decrease in the level of facilitator involvement (see section 9.3.6.3). The facilitator's engagement level is high in the initiation phase (see Figure 9.1), as the oncology health professional attempts to build a safe, trusting and amicable environment so that the patient can speak freely. This is explained by the gradual change in the intensity of the blue colour from the initiation phase to the reflection phase throughout the facilitation process (see Figure 9.7).

The engagement process of male patients is represented by a curved teal (blue-green) arrow with a narrow base in the initiation phase, which becomes progressively thicker in the working and reflection phases (see Figure 9.8). Variation in the dark hue of teal colour to light indicates the extent to which patients engage with oncology health professionals during the facilitation of men's sexual health. The changing thickness of this arrow represents an increase in the self-confidence and trust of the patient during the process. This change is symbolic of the gradual improvement in men's positive experiences with supportive care for their sexual health. The facilitator moves to the working phase only when they are satisfied that the patient is prepared and ready to engage in the process.

### b) Working phase

The working phase starts after the facilitator has established a trusting relationship with the patient and has created a safe and non-judgemental atmosphere. During this phase, communication between the facilitator and the patient evolves into a two-way conversation. Figures 9.7 and 9.8 show that the improvement of SCMSH is dependent on the engagement of the facilitator and the male patient in the facilitation process. The facilitator must continue to value and respect patients' preferences, health beliefs, cultures, religions and societal norms because these factors are often barriers to sexual health dialogue that can result in patients not engaging in the process (see Figure 3.2). The facilitator can apply models such as the 5 A's behaviour change framework (see Section 3.10) to initiate sexual health dialogue with a patient. The intention is to help patients restore balance in their bodies, minds and spiritual dimensions that have been disrupted by a decline in erectile function and cause intimate relationship problems. SCMSH moves from the initiation phase to the reflection phase, with the facilitator utilising person-centredness and whole-person care throughout the model process. For example, a male patient moves at his own pace to develop mental strength and to cope with external environmental stressors that exert pressure on him to regain erectile function. The progression of supportive care is subtle and marked by a gradual colour change of the spiral loop from dark green to lighter green (see Figure 9.10). In theory, this means that a patient starts to achieve balance in the internal environment of their body, mind, and spirit to overcome stressors. Lastly, when complex issues arise beyond the facilitator’s expertise while the facilitator is engaging with the patient, it is essential to refer the male patient to a specialist, such as a clinical psychologist or sex therapist, for expert advice.

### c) Reflection phase

The reflection phase is the last phase and is represented in light green. Its colour indicates renewal and optimism (Cherry, 2020). In this phase, the oncology health professional and male patients engage in debriefing to reflect on the facilitation of men’s sexual health. This final phase is smaller and less intensive than the initiation and working phases (see Figures 9.1 and 9.10). Patients reflect on the gaps, successes and strengths of the facilitation process in this phase. An oncology health professional and a male patient reflect on whether their shared objectives were met and evaluate the success and shortcomings of the entire model process. Furthermore, an oncology health professional and male patients contemplate interventions that the patient could use to cope with erectile function challenges or rehabilitate sexual functioning to improve quality of life during and after radiotherapy for prostate cancer. The facilitator’s involvement in this phase is limited; this phase is mainly geared towards the patient reflecting on his satisfaction following the facilitation of SCMSH during and after radiotherapy for prostate cancer. During this phase, a patient reflects on the care received, while the oncology health professional reflects on his/her skills and knowledge to facilitate SCMSH.

### d) The outcome of the model process

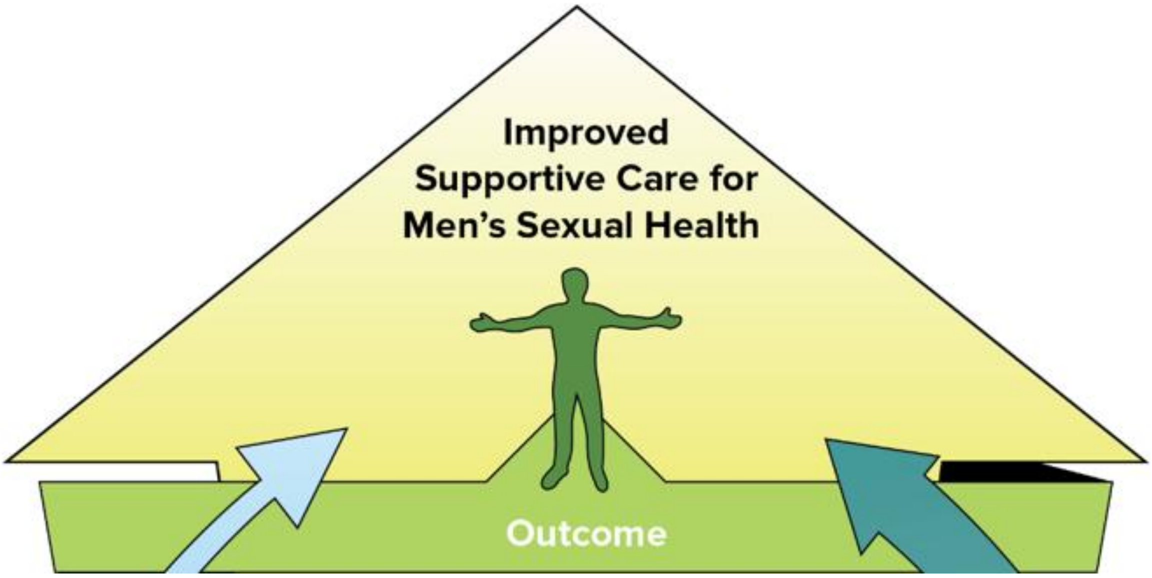

**Figure 9.11: Improved SCMSH**

The upper third of this model shows the outcomes of the initiation, working and reflection phases. The outcome is improved facilitation of SCMSH, as shown in Figures 9.1 and 9.9. A male patient, initially portrayed in grey, as shown in Figure 9.4, is now transformed into green. This man represents a happy man with enhanced self-confidence, who is content with himself and ready to deal with external environmental factors that may destabilise his internal environment. The assumption here is that the patient, at this stage, would have worked out a way to manage his sexual health problems. Theoretically, this means a male patient has regained a balance in the internal environment of body, mind and spirit to overcome the stressors of the external environment (see Section 9.3.3.1). As the patient starts to restore balance in the body, mind and spirit after the initiation, work and reflection phases, in this order, the role of the facilitator gradually decreases, as indicated by the tapering end of the curve and its narrow arrowhead at the top left-hand side of the model (see Sections 9.3.6.6 and Figure 9.11). A male patient engagement process curve culminating in a thick, dark blue-green arrowhead at the top right-hand side (see Sections 9.3.6.7 and Figure 9.11) signifies a positive experience of the SCMSH received in oncology.

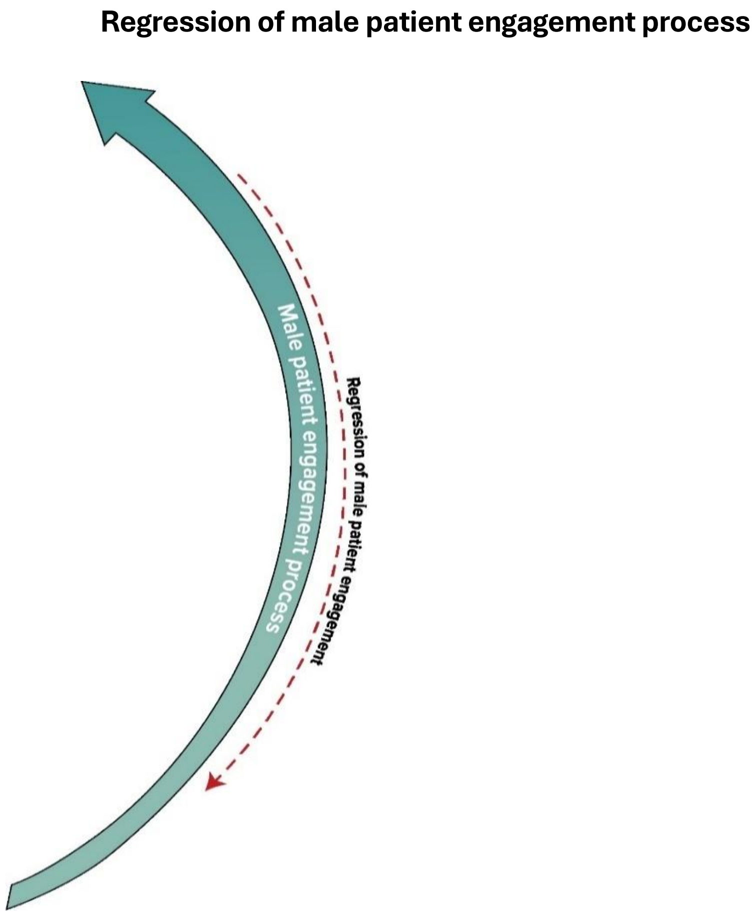

**Figure 9.12: A dashed red line arrow**

The regression of the male patient engagement process defines relapse activity. The dashed red line (see Figure 9.12) indicates a scenario in which the patient either did not actively participate or chose to withdraw from the interaction, leading to no positive outcomes. The red hue signifies potential flaws or challenges in the facilitation process, which might necessitate termination, repetition or referral to a specialist (Fikrlova et al., 2019). Consequently, the patient may return to or continue experiencing an unbalanced internal environment characterised by hopelessness, loneliness, decreased confidence and fear of intimate relationships, represented by the grey male figurine (see Figure 9.5).

## 9.4 EVALUATION OF THE MODEL (PHASE 4)

Phase 4 of this study focused on evaluating the model and developing operational guidelines. During this phase, an independent panel of experts was invited to participate in an online meeting to critique the model. The invitation letter was sent to the experts, who agreed to participate (see Annexure 10).

An electronic copy of the first draft of the model (see Annexure 11) was emailed to the panel. Following an online meeting conducted via Microsoft Teams, a Google Forms questionnaire was distributed to the panel for additional evaluation. The panel was asked to evaluate the model according to the following criteria:

- Clarity, simplicity, and consistency;
- Appropriateness and relevance;
- Practicality and implementability;
- Adaptability and generalisability;
- Clinical significance and practical value; and
- Accessibility and reliability.

The model evaluation criteria were adapted from those proposed by Chinn and Kramer (2011) and Walker and Avant (2011). The feedback received from the panel indicated that the model was acceptable, with only minor revisions required, as will be explained in Section 9.4.2.

### 9.4.1 Recruitment and selection of expert panel members

A purposive sampling technique was used to select a panel of experts for model evaluation. The potential panel members were recommended by my supervisors and by Doctoral graduates who had undertaken similar studies in radiography. I also drew on my professional experience and research network to recruit panel members. To be included on the model evaluation panel, participants had to meet at least one of the following inclusion criteria:

- A bachelor degree in a healthcare-related field;
- Clinical experience of working as a radiation therapist or oncologist;
- Experience in radiography education and practice;
- Experience in model development; and
- Knowledge and experience of caring for patients with cancer.

In total, 14 experts from South Africa and abroad were invited via email to participate in the model evaluation to recruit a panel of six to eight experts. The initial attempt to schedule an online meeting that accommodated most invited experts was unsuccessful. Six experts were expected to attend the meeting on the second attempt, but only four attended. The four experts satisfied at least four inclusion criteria, so after consulting my supervisors, the meeting continued. These experts were affiliated with the University of Canberra, the University of Johannesburg, and the Durban University of Technology. The demographics of the expert panel members are provided in Table 9.1.

**Table 9.1: Demographics of expert panel members**

| Expert | Qualification | Experience | Designation | Sector | Country |
|---|---|---|---|---|---|
| ER 1 | PhD in Radiography | 30 years | Senior lecturer | Academia | Australia |
| ER 2 | PhD in Nursing | 24 years | Professor | Academia | South Africa |
| ER 3 | PhD in Radiography | 8 years | Lecturer | Academia | South Africa |
| ER 4 | PhD in Radiography | 20 years | Senior lecturer | Academia | South Africa |

Note. ER: Expert reviewer, PhD: Doctor of Philosophy

### 9.4.2 Panel feedback post model evaluation

The panel provided several important comments on the first draft of the model (see Annexure 11). First, the panel recognised the model as important and relevant to its intended purpose. For example, the first draft was intended only for public health institutions, but the panel suggested that the model include both public and private health institutions. The panel made the following comments:

i) Consider splitting agents into primary and secondary agents.
ii) Consider private health institutions.
iii) Adjust the size of the grey figurines to match the size of the green figurines.
iv) Rename the orientation phase to the initiation phase.
v) Rename the termination phase to the reflection phase.
vi) Adjust the sizes of the spiral model process.
vii) Consider placing the outcome of the model process at the model's apex.

### 9.4.3 Modifications performed to the model after evaluation

After carefully reviewing the panellists' feedback listed in Section 9.4.2, I disregarded the first comment. In my judgement, this comment shifted away from the desire to promote collaboration among healthcare professionals; instead, it could introduce an undesirable layer of dynamic power barriers in providing SCMSH in oncology settings. After careful consideration, I determined it appropriate to perform the following specific modifications as suggested: ii) adding private health institutions to the context of the model; iii) adjusting the size of the grey figurine to match the size of the green figurine; (iv) renaming the orientation phase to the initiation phase; (v) renaming the termination phase to the reflection phase; (vi) changing the design of the spiral loop to a zigzag loop; and (vii) improving the description of the nature and process of the model.

## 9.5 GUIDELINES FOR OPERATIONALISING THE MODEL

The guidelines to operationalise the supportive care model to facilitate men's sexual health are customisable and can be tweaked to suit specific oncology settings and to target both oncology health professionals in management positions and those involved in caring for patients with cancer clinically. The guidelines provide a baseline to simplify supportive care for sexual health in men receiving radiotherapy for prostate cancer, to enable oncology health professionals to deliver whole-person care and complement existing sexual health frameworks in clinical settings. Each guideline has objectives and a strategy for practical implementation.

### 9.5.1 Guideline 1: Create a non-judgemental therapeutic environment

#### *9.5.1.1 Objectives*

- Create good rapport and trusting relationships with men who need help.
- Establish a mutual shared understanding of the existing problem.
- Set achievable goals for appropriate actions.

**Strategy for action**

It is recommended that, before a facilitator helps patients to re-establish their unbalanced environments, the facilitator should possess a balanced internal and external environment. The facilitator should have strong interpersonal skills to cultivate positive therapeutic rapport with patients and to encourage them to express their concerns about sexual health more openly. Moreover, it is essential for the facilitator to always remain non-judgemental by backing their belief system, values, attitudes and culture towards sexual health topics to facilitate such topics objectively without bias. The achievable goals set by the patient should meet the patient's needs.

### 9.5.2 Guideline 2: Make supportive care for sexual health routine care

#### *9.5.2.1 Objectives*

- Introduce workshops on SCMSH.
- Avail resources to improve supportive care for sexual health services.

**Strategy for action**

Facilitating SCMSH can be normalised through a one-day workshop at which oncology health professionals are introduced to the model and its implementation. Patient counselling, which includes holistic care of the patient and discussions about sexual health, should be routine in oncology. Oncology health professionals should utilise tools currently available in the literature to improve sexual health dialogue with patients as part of routine prostate cancer care. For example, the EASSi framework and the 5 A's behavioural change framework are two of these tools (see Sections 3.5 and 3.10) (McCaughan et al., 2020, Park et al., 2009; Sturgiss & van Weel, 2017; Vallis et al., 2013).

### 9.5.3 Guideline 3: Cultivate interprofessional collaborative practice culture

#### *9.5.3.1 Objectives*

- Empower all oncology health professionals to participate in SCMSH.
- Discourage the practice of shifting all patient care responsibilities to doctors.

**Strategy for action**

Clarify the roles of participating oncology health professionals to ensure collaborative care practices for sexual health and preventing RTTs or oncology nurses from shifting this responsibility to doctors. To support RTTs' role of providing psychosocial support to cancer patients, it is essential to revise the scope of RTTs' practice (Department of Health, 2020; Health Professions Council of South Africa, 2008). Additional training is vital for building capacity and fostering collaborative care practices for sexual health in men with prostate cancer.

## 9.6 SUMMARY

This chapter presented a model to support oncology health professionals, especially RTTs, to provide effective supportive care for sexual health in men receiving radiotherapy for prostate cancer and facing sexual health challenges. The model was discussed in detail regarding its intent, assumptions, context, theoretical concepts and structural elements. In addition, this chapter detailed expert feedback from the panel that evaluated the model framework. It also proposed guidelines to operationalise the model in oncology settings. Chapter 10 will respond to the research questions and explain the contributions, limitations and strengths of the study.

# CHAPTER 10

# SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

*You can't connect the dots looking forward; you can only connect them looking backwards. So, you have to trust that the dots will somehow connect in your future.*
Steve Jobs

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## 10.1 INTRODUCTION

I envision a future where every man treated for prostate cancer receives not only radiotherapy to cure the disease, but also evidence-based sexual health support to help him cope with sexual health challenges. The aim of this study was to develop a model to support the facilitation of SCMSH in patients receiving radiotherapy for prostate cancer in oncology settings. This chapter will draw conclusions from the findings of this study and address the following research questions to fulfil its objectives:

1. What are the lived experiences of men after the diagnosis of prostate cancer and radiotherapy? (Research Question 1)
2. How did men experience the facilitation of supportive care for their sexual health in radiation oncology during and after radiotherapy for prostate cancer? (Research Question 2)
3. What are the perspectives of RTTs regarding their involvement in facilitating sexual health in patients receiving radiotherapy for prostate cancer? (Research Question 3)
4. What support do RTTs need to be involved in facilitating sexual health in radiation oncology? (Research Question 4)

## 10.2 SYNOPSIS OF THE STUDY

This study stemmed from growing concerns about the absence of supportive care for patients with cancer in oncology settings who experience sexual health issues. Radiation therapists, as frontline workers in radiation oncology, have a vital role to play in facilitating the sexual health of men receiving radiotherapy for prostate cancer. Yet, RTTs' participation in facilitating supportive care for patients with sexual health issues is not well understood. Therefore, this study argues that RTTs should promote sexual health as a routine practice during patient counselling throughout the radiotherapy course (Section 1.1). This argument is supported by the following question: What support do RTTs need to be involved in facilitating sexual health in radiation oncology?

This study used an exploratory sequential mixed method research design involving two distinct participant groups to explore the phenomenon under investigation. The participants were patients with prostate cancer who had been treated with radiotherapy and the RTTs. Phase 1 involved face-to-face interviews to explore the experiences of male patients regarding the provision of supportive care for sexual health in radiation oncology. In Phase 2, RTTs were surveyed using a paper-based questionnaire developed from the findings of Phase 1. The objective of Phase 2 was to collect the opinions of RTTs to determine their understanding of their involvement in facilitating sexual health in patients undergoing radiotherapy for prostate cancer. After that, the key findings of Phases 1 and 2 were integrated on the basis of the research aim, questions and central argument of the study. Dickoff's theory (1968) was applied to classify concepts extracted from the integrated findings of Phases 1 and 2. The identified concepts were written into relationship statements to guide the development of a model to facilitate SCMSH in Phase 3 of the present study.

## 10.3 SUMMARY OF KEY FINDINGS

In the framework of the research questions and consistent with the research objectives, the following responses were drawn from the findings to answer the following research questions:

> **Research Question 1**: What are the lived experiences of men after the diagnosis of prostate cancer and radiotherapy?

It appears that sexual dysfunction is a common side effect after the diagnosis and treatment of prostate cancer, which affects the sexual functioning of men by causing erectile dysfunction, in particular, and impairing the quality of their relationships. The experiences of men who had received radiotherapy for prostate cancer reveal that they suffered from erectile dysfunction and were dissatisfied with the sexual health care they received from oncology health professionals. Furthermore, there appears to be a lack of psychosocial support among patients with cancer after treatment completion. Section 7.6 reports that using oral PDE5 inhibitors is typically the first-line treatment of choice for erectile dysfunction in men who have undergone surgery, radiotherapy, or hormone therapy for prostate cancer. However, in this study, some men who had completed radiotherapy and hormonal therapy for prostate cancer found themselves still facing persistent erectile dysfunction even after using oral PDE5 inhibitors such as sildenafil (Viagra), tadalafil (Cialis) and vardenafil (Levitra) (Section 4.5.1). From participants' reports in this study, it seems that patients who had received radiotherapy and hormone therapy for prostate cancer did not find oral PDE5 inhibitors effective in treating erectile dysfunction.

> **Research Question 2**: How did men experience the facilitation of supportive care for their sexual health in radiation oncology during and after radiotherapy for prostate cancer?

Based on the experiences of male patients, the facilitation of SCMSH in radiation oncology appears inconsistent. Sexual health dialogue between male patients and RTTs does not meet patient expectations. This data reveals an apparent mismatch during counselling. In oncology settings, sexual health counselling is often overlooked in routine patient care. This gap is highlighted by RTTs' avoidance of conversations about sexual health with patients undergoing radiotherapy for prostate cancer. Patients treated for prostate cancer typically expect proactive intervention and supportive care for their sexual health in oncology settings. Conversely, RTTs seem to answer patients' questions about sexual health only if they are asked; alternatively, RTTs refer patients who ask such questions to doctors. The disparity identified in the expectations of RTTs and patients appears to contribute to a deficiency in SCMSH in oncology settings. A likely reason why some RTTs avoid discussing sexual health issues with patients undergoing radiotherapy for prostate cancer is RTTs perceived lack of confidence, skills and expertise in sexual health counselling (see Section 6.3.2.4.1). Moreover, patients undergoing treatment for prostate cancer often encounter difficulties obtaining consistent sexual health support from physicians, owing to the frequent rotation of doctors during their visits to different oncology clinics at public hospitals.

**Research Question 3**: What are the perspectives of RTTs regarding their involvement in facilitating sexual health in patients receiving radiotherapy for prostate cancer?

The findings of this study indicate that RTTs can establish effective communication networks with patients undergoing radiotherapy. Nevertheless, RTTs' views on their role in supporting the sexual health of male patients undergoing prostate cancer treatment varied, which highlights the significant uncertainty and variability in practice regarding including sexual health dialogue in patient counselling. Radiation therapists often provide counselling on the effects of radiation; however, patients may be referred to radiation oncologists for issues related to sexual health. The opinions expressed by the RTTs indicate that they were not actively involved in providing psychosocial support to patients with prostate cancer. However, an alternative perspective suggests the application of a multidisciplinary approach to improving the sexual health of male patients.

**Research Question 4**: What support do RTTs need to be involved in facilitating sexual health in radiation oncology?

Generally, RTTs emphasised the need for greater support to expand their professional role to include sexual health as part of their routine care to patients. The following strategies were captured from the results: (i) revising the radiation therapy curriculum, (ii) reviewing the scope of practice, (iii) providing in-service training in sexual health counselling, (iv) enhancing access to information, and (v) increasing awareness of sexual health. The perspectives of RTTs also underscored the need for collaboration among oncology nurses, clinical psychologists, social workers and RTTs themselves to deliver personalised care to patients being treated for prostate cancer in oncology. Importantly, this study proposes a model framework to support RTTs to facilitate SCMSH for patients receiving radiotherapy for prostate cancer, as part of routine patient counselling.

## 10.4 STRENGTHS OF THE STUDY

The strengths of this study include the identification of various factors that enhance research quality and scientific reliability. The integrity of this study was enhanced by applying a mixed methods design and ensuring trustworthiness and the authority and expertise of the researcher.

### 10.4.1 Sequential exploratory mixed methods design

By using a sequential exploratory mixed methods research design, I collected a broader and deeper data set that allowed me to understand the diversity and complexity of the research phenomenon (see Section 4.6.1). A key strength of this study is its methodological design, which allowed for a comprehensive exploration of the existing gap in SCMSH in radiation oncology from multiple perspectives. By exploring the experiences of patients who had undergone radiotherapy for prostate cancer and the challenges RTTs faced in discussing sexual health topics with patients, this study offers valuable insights into both patient and professional aspects of care.

### 10.4.2 Trustworthiness

The findings of this study were drawn from the recipients and agents of the model classified according to Dickoff's (1968) theory (see Figure 8.2). The development of a model to facilitate men's sexual health was built on concepts derived from empirical findings on the phenomenon under study. The descriptions of the components of the model were placed in context by reflecting on the experiences of male patients living with erectile function challenges and the barriers facing RTTs in holding sexual health dialogue with patients receiving radiotherapy for prostate cancer. The SCMSH model developed in this study is deemed credible because it was evaluated and reviewed by a panel of experts with radiography and nursing backgrounds.

### 10.4.3 Authority and expertise

I have seven years of experience as a radiation therapist in public and private oncology facilities, during which I acquired the necessary competencies and knowledge to conduct this study. I was responsible for treating patients with cancer in radiation oncology as part of my professional responsibilities. This study was led by supervisors transitioning from clinical RTTs to associate professors. Their wealth of experience and knowledge enhanced the scientific basis and trustworthiness of this study. Both supervisors have expertise in qualitative and quantitative research, and their expertise supported the methodology chosen for this study. This doctoral study builds on my

Master's degree project, which explored the experiences of patients who had been diagnosed with prostate cancer after receiving radiotherapy. The qualitative expertise I gained from my Master's degree studies complemented this mixed methods study. Furthermore, I have published two papers in this area of research ( Phahlamohlaka et al., 2018; Phahlamohlaka & Mdletshe, 2022).

## 10.5 LIMITATIONS OF THE STUDY

This study categorised its limitations into three categories: scope of study, methodology followed for Phase 2, and validation of the model in practice, and utilised these limitations to explore the opportunities they bring for future research in these areas.

### 10.5.1 Scope of the study

The scope of this study was limited to two key population groups: men who had completed radiotherapy for prostate cancer and RTTs from two oncology departments in public hospitals in the Gauteng province. Even though the outcomes of this study are specific to the South African context, it provides a promising framework to enhance SCMSH in oncology through RTTs in other contexts and to guide future research.

### 10.5.2 Methodology for Phase 2

In Phase 1 of this exploratory sequential mixed methods study, patients interviewed had received radiotherapy for prostate cancer at one public hospital in the Gauteng province, South Africa. The scarcity and sparsity of RTTs in this country made conducting large-scale paper-based surveys costly. Consequently, the Phase 2 survey was limited to two state hospitals in one province and a population of 60 RTTs. As a result, the sample of this study included RTTs working only in the selected public hospitals. Future multicentre studies should consider including a diverse group of oncology health professionals, such as oncologists from public and private oncology settings, to validate the proposed model for facilitating SCMSH in real-world oncology settings.

### 10.5.3 Evaluation and validation of the model

An expert panel conducted a critical evaluation of the proposed supportive care model; however, the RTTs on the panel did not attend the evaluation session. The practical validation of the model was outside the purview of the current study. A postdoctoral study is planned to involve RTTs and oncologists to practically test the implementability of the model in oncology settings.

## 10.6 RECOMMENDATIONS

The implications of this study have led to the recommendations relating to the following aspects: (i) supportive care for sexual health in oncology; (ii) collaborative practice among oncology health professionals; (iii) oncology education, training and practice; iv) role extension in the radiation therapy profession; (v) re-evaluation of the scope of practice for radiation therapy; and vi) future research endeavours.

### 10.6.1 Supportive care for sexual health in oncology

Radiation oncology departments are encouraged to integrate sexual health screening for sexual health challenges as a routine practice during and after treatment follow-up visits. It is recommended that the screening should be guided by tools such as the 5 A's behavioural change framework. To reduce the stigma surrounding discussing sexual health issues, the study recommends including a sexual health rehabilitation programme as part of oncology care. Oncology health professionals are encouraged to adopt a multidisciplinary approach to enhancing whole-person care by focusing on supportive sexual health care. Furthermore, it is recommended that sexologists, sex therapists or trained oncology health professionals provide couple counselling services to men undergoing prostate cancer treatment in oncology.

### 10.6.2 Collaborative practice among oncology health professionals

The heads of oncology departments are encouraged to cultivate a multidisciplinary care approach in oncology settings to advance collaborative interprofessional practice among oncology doctors, RTTs, oncology nurses, social workers and clinical psychologists in oncology settings, focusing on advancing sexual health support for patients undergoing radiotherapy for prostate cancer. In a busy oncology clinic, this approach might help relieve the workload of oncologists. To address the challenges of conflicting roles in multidisciplinary care, oncology health professionals involved in SCMSH should follow department guidelines and limit themselves to the defined scope of practice of their respective professions. Additionally, I propose the integration of interprofessional education into oncology-related curricula to improve the preparation of oncology graduates for collaborative practice with other healthcare professionals in their future careers.

### 10.6.3 Oncology education, training and practice

It is recommended that sexual health education and counselling are integrated into radiation therapy curricula and form part of the scope of the profession and practice. For example, universities offering Bachelor degrees in radiation therapy should consider developing short courses in advanced radiation therapy practice that encompass topics such as supportive care for sexual health in patients receiving radiotherapy.

I recommend adopting the model to facilitate SCMSH proposed in this study in radiation therapy education, training and practice to enhance whole-person care during radiotherapy for patients with prostate cancer. Although the study was conducted in the public health sector, the panel agreed that the model was suitable for use in oncology settings in both public and private health institutions.

### 10.6.4 Role extension in the radiation therapy profession

Given the limited research on RTTs' involvement in sexual health care in oncology (see Section 3.9), I recommend that radiography journals prioritise role extension of RTTs to include supportive sexual health care as a special matter to advance research in this area. The discourse on RTTs' role extension, driven by technological advancements and evolving healthcare needs, dates back to the late 20th century. However, despite research contributions from radiography scholars, no significant changes have been observed in South Africa. This raises concerns about collaboration between the Department of Health, the Health Professions Council of South Africa, and universities offering radiography education and training. Therefore, I advocate for shifting the discussion on RTTs' role extension from theory to practice, especially in

Africa. To support advanced practice in cancer care, I recommend that universities develop advanced diplomas or short courses to address existing gaps in cancer care.

### 10.6.5 Re-evaluation of the scope of practice of radiation therapy

The scope of practice of all oncology health professionals, including RTTs, should be reviewed to establish consistent, integrated and person-centred standards of care in oncology, to align the roles of oncology health professionals in supportive care for sexual health support for patients receiving treatment for prostate cancer. I recommend that the scope of practice for RTTs is reviewed at least every five to 10 years, to adapt it to include evolving trends in cancer treatment technology, healthcare delivery models and increasing demands for cancer treatments and specialised supportive care. Additionally, to adapt the scope of practice to evolving education and training curricula for RTTs in universities.

### 10.6.6 Future research endeavours

To build on the contributions of the present study, a multicentre exploratory research study with a diverse cohort of health care professionals who are involved in the care of patients with prostate cancer, including their spouses, is recommended. In this way, a balanced view can be obtained of what these professionals think about collaborative care practice for SCMSH in patients treated for prostate cancer in oncology settings. Unexpectedly, this study found that men continue to experience erectile dysfunction after prostate cancer treatment, even after taking PDE5 inhibitors such as sildenafil (Viagra), tadalafil (Cialis), and vardenafil (Levitra) for erectile dysfunction treatment; the literature reports similar evidence (refer to Subsection 7.2.1). New research that incorporates a thorough literature review could be undertaken to explore this unexpected finding further, because the focus of the present study was not on the use of PDE5 inhibitors for erectile dysfunction treatment in patients who received radiotherapy for prostate cancer.

## 10.7 CONCLUDING REMARKS

This research study confirms that men treated for prostate cancer experience weak erectile function after the completion of radiotherapy and androgen deprivation/hormonal therapy. The key finding of this study is that SCMSH for patients undergoing radiotherapy for prostate cancer poses a significant challenge for RTTs and remains overlooked in radiation oncology. Patients receiving radiotherapy for prostate cancer are willing to share their sexual challenges with oncology health professionals but face barriers that hinder whole-person care in radiation oncology. These barriers include factors such as busy clinics, attitudes towards sexual health, gender, culture, religion and knowledge gaps among RTTs about offering sexual health counselling. In the present study, RTTs acknowledged the importance of being involved in facilitating SCMSH but expressed a need for further training to enhance their confidence and abilities in this area. They advocated for a multidisciplinary approach to address gaps in SCMSH in oncology. Moreover, RTTs are uncertain about their scope of practice regarding the inclusion of sexual health in routine patient counselling during radiotherapy, and this uncertainty needs to be addressed and attended to improve whole-person care in oncology. After connecting the dots in the findings, this study developed a supportive care model to encourage and support the involvement of RTTs in facilitating men's sexual health in patients receiving radiotherapy for prostate cancer. Lastly, this model is considered an ideal framework of reference to support and promote the professional roles of RTTs in cancer care.

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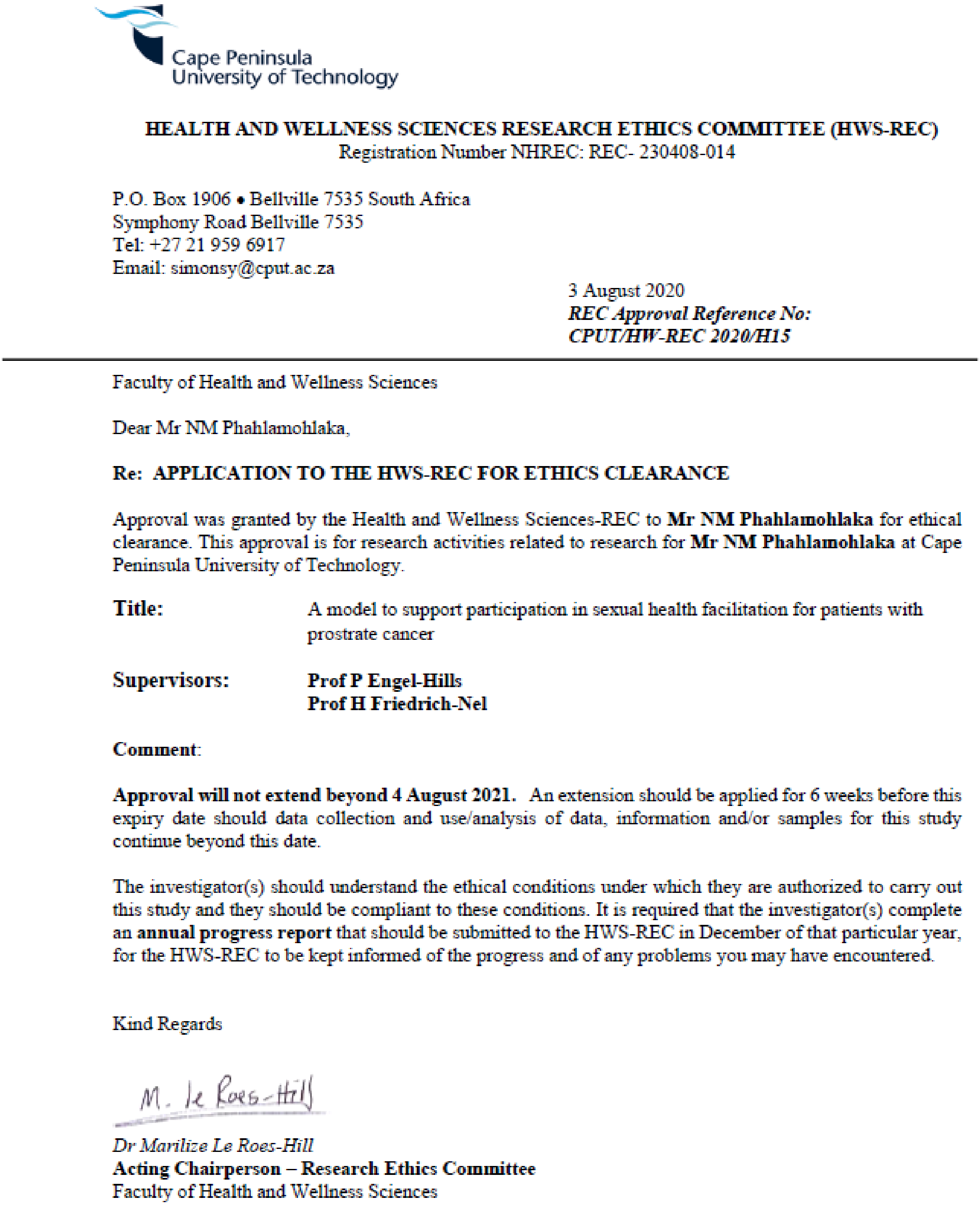
# Annexure 1: Ethics clearance letter (Cape Peninsula University of Technology)



Cape Peninsula
University of Technology

**HEALTH AND WELLNESS SCIENCES RESEARCH ETHICS COMMITTEE (HWS-REC)**
Registration Number NHREC: REC- 230408-014

P.O. Box 1906 • Bellville 7535 South Africa
Symphony Road Bellville 7535
Tel: +27 21 959 6917
Email: simonsy@cput.ac.za

3 August 2020
***REC Approval Reference No:***
***CPUT/HW-REC 2020/H15***

---

Faculty of Health and Wellness Sciences

Dear Mr NM Phahlamohlaka,

**Re: APPLICATION TO THE HWS-REC FOR ETHICS CLEARANCE**

Approval was granted by the Health and Wellness Sciences-REC to **Mr NM Phahlamohlaka** for ethical clearance. This approval is for research activities related to research for **Mr NM Phahlamohlaka** at Cape Peninsula University of Technology.

| | |
|---|---|
| **Title:** | A model to support participation in sexual health facilitation for patients with prostrate cancer |
| **Supervisors:** | **Prof P Engel-Hills**<br>**Prof H Friedrich-Nel** |

**Comment**:

**Approval will not extend beyond 4 August 2021.** An extension should be applied for 6 weeks before this expiry date should data collection and use/analysis of data, information and/or samples for this study continue beyond this date.

The investigator(s) should understand the ethical conditions under which they are authorized to carry out this study and they should be compliant to these conditions. It is required that the investigator(s) complete an **annual progress report** that should be submitted to the HWS-REC in December of that particular year, for the HWS-REC to be kept informed of the progress and of any problems you may have encountered.

Kind Regards

M. le Roes-Hill

*Dr Marilize Le Roes-Hill*
**Acting Chairperson – Research Ethics Committee**
Faculty of Health and Wellness Sciences

# Annexure 2: Ethics clearance letter (University of the Witwatersrand)

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

R14/49 Mr Nape Phahlamohlaka

**HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)**

**CLEARANCE CERTIFICATE NO. M2011123**

| | |
|---|---|
| **NAME:** (**Principal Investigator)** | Mr Nape Phahlamohłaka |
| **DEPARTMENT:** | Health Sciences<br>Cape Peninsula University<br>Charlotte Maxeke Johannesburg Academic Hospital |
| **PROJECT TITLE:** | A model to support participation in sexual health facilitation for patients with Prostate Cancer |
| **DATE CONSIDERED:** | Ad hoc |
| **DECISION:** | Approved unconditionally |
| **CONDITIONS:** | |
| **SUPERVISOR:** | Prof Penelope Claire |
| **APPROVED BY:** | Dr CB Penny, Chairperson, HREC (Medical) |
| **DATE OF APPROVAL:** | 23/11/2020 |

**This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.**

**DECLARATION OF INVESTIGATORS**

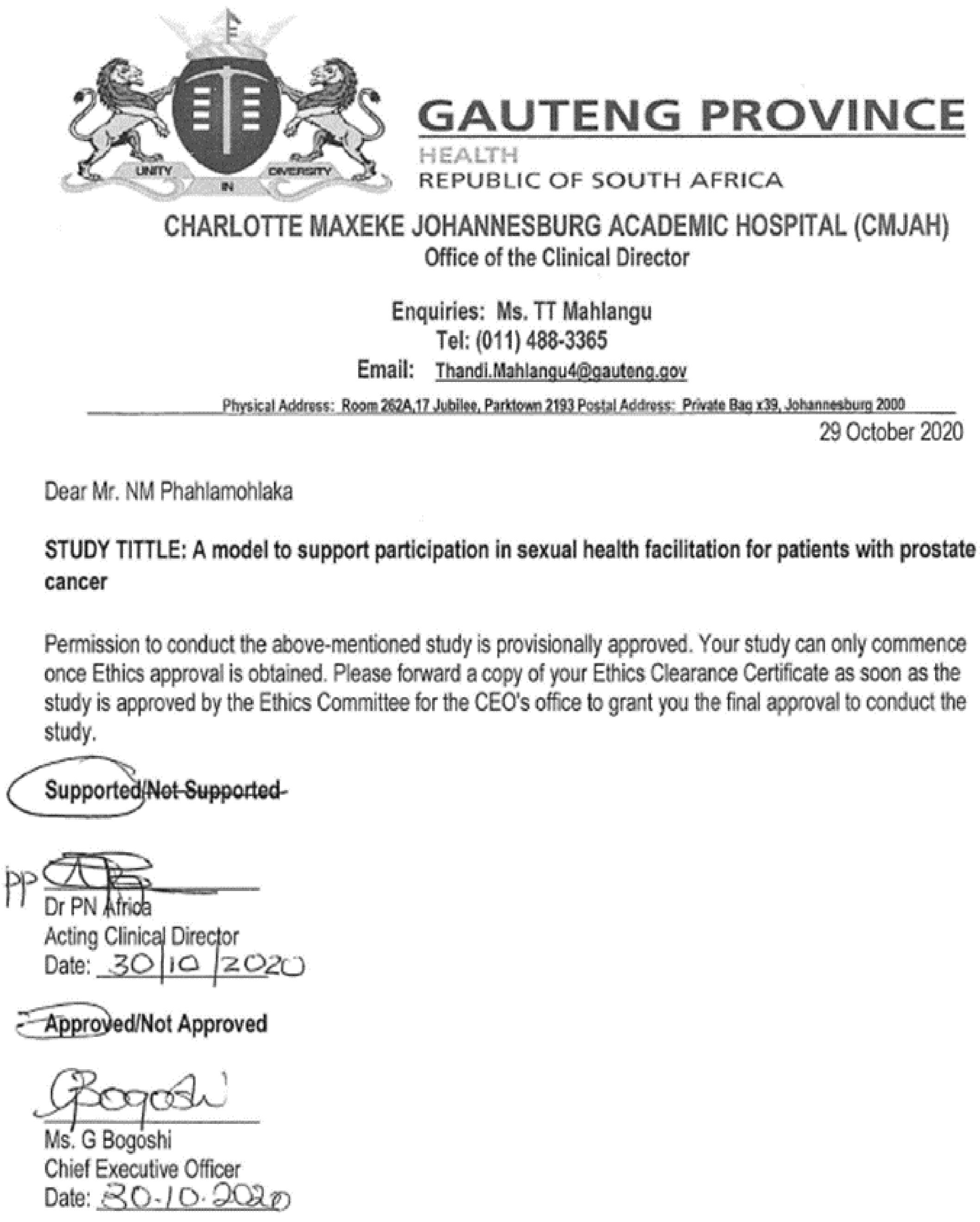
To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on the Third Floor, Faculty of Health Sciences, Phillip Tobias Building, 29 Princess of Wales Terrace, Parktown, 2193, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions.Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report.** The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in **November** and will therefore be due in the month of **November** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature ____________________

Date ____________________

**PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES**

# Annexure 3: Approval letter from the hospital chief executive officer



GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

CHARLOTTE MAXEKE JOHANNESBURG ACADEMIC HOSPITAL (CMJAH)
Office of the Clinical Director

Enquiries: Ms. TT Mahlangu
Tel: (011) 488-3365
Email: Thandi.Mahlangu4@gauteng.gov

Physical Address: Room 262A,17 Jubilee, Parktown 2193 Postal Address: Private Bag x39, Johannesburg 2000

29 October 2020

Dear Mr. NM Phahlamohlaka

**STUDY TITTLE: A model to support participation in sexual health facilitation for patients with prostate cancer**

Permission to conduct the above-mentioned study is provisionally approved. Your study can only commence once Ethics approval is obtained. Please forward a copy of your Ethics Clearance Certificate as soon as the study is approved by the Ethics Committee for the CEO's office to grant you the final approval to conduct the study.

**[✓ Supported]/~~Not Supported~~**

pp

Dr PN Africa
Acting Clinical Director
Date: 30/10/2020

**[✓ Approved]/Not Approved**

GBogoshi

Ms. G Bogoshi
Chief Executive Officer
Date: 30.10.2020

# Annexure 4: Approval letter from the head of radiation oncology department

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

Dated 28-10-2020

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr **Nape Matheko Phahlamohlaka** has been granted permission to do research project for Doctorate in Radiography in the Department of Radiation Oncology at Charlotte Maxeke Johannesburg Academic Hospital. His topic is entitled as "**A model to support participation in sexual health facilitation for patients with prostate cancer**".

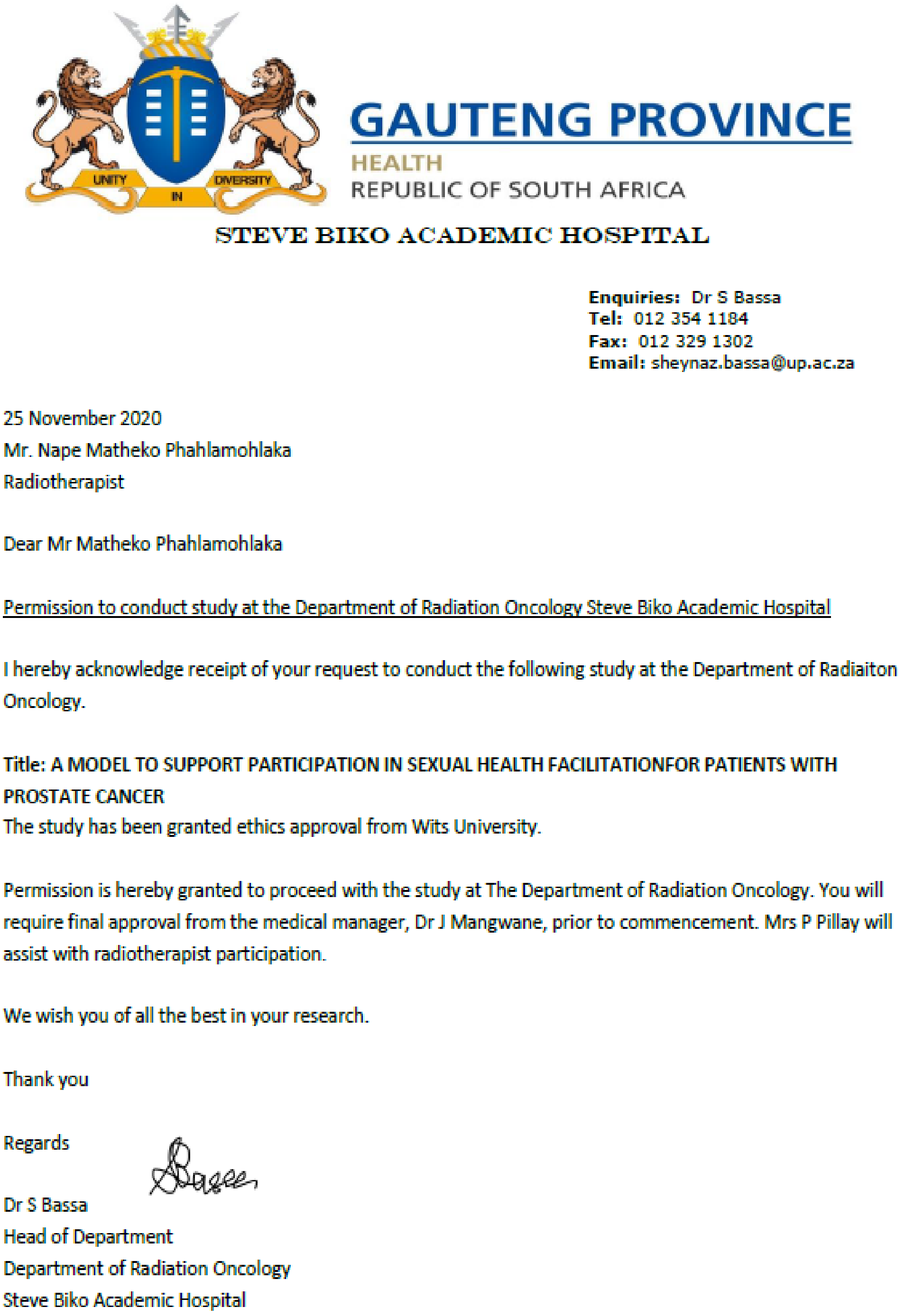
I wish him good luck in his endeavour.

Vinay Sharma
Prof. Vinay Sharma

Head, Department of Radiation Oncology

Department of Radiation Oncology
Area 348
Date: 28-10-2020
CMJAH - University of the Witwatersrand

# Annexure 5: Approval letter from the head of radiation oncology department



GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA
STEVE BIKO ACADEMIC HOSPITAL

**Enquiries:** Dr S Bassa
**Tel:** 012 354 1184
**Fax:** 012 329 1302
**Email:** sheynaz.bassa@up.ac.za

25 November 2020
Mr. Nape Matheko Phahlamohlaka
Radiotherapist

Dear Mr Matheko Phahlamohlaka

Permission to conduct study at the Department of Radiation Oncology Steve Biko Academic Hospital

I hereby acknowledge receipt of your request to conduct the following study at the Department of Radiaiton Oncology.

**Title: A MODEL TO SUPPORT PARTICIPATION IN SEXUAL HEALTH FACILITATIONFOR PATIENTS WITH PROSTATE CANCER**
The study has been granted ethics approval from Wits University.

Permission is hereby granted to proceed with the study at The Department of Radiation Oncology. You will require final approval from the medical manager, Dr J Mangwane, prior to commencement. Mrs P Pillay will assist with radiotherapist participation.

We wish you of all the best in your research.

Thank you

Regards

Dr S Bassa
Head of Department
Department of Radiation Oncology
Steve Biko Academic Hospital

## Annexure 6: Information sheet for the participants

Dear participant

My name is Nape Matheko Phahlamohlaka. I am a lecturer at the Central University of Technology, Free State (CUT). I invite you to participate in my Doctor of Radiography studies registered with the Cape Peninsula University of Technology (CPUT).

This study aims to develop a model to support radiation therapists (radiation therapists) participating in sexual health facilitation for prostate cancer (prostate cancer) patients in radiation oncology. The title of my research study is *A model to facilitate supportive care for mens sexual health in patients receiving radiotherapy for prostate cancer*.

The objectives of this study are, first, to question patients with prostate cancer who had completed radiation therapy on their experiences and observations about sexual health care in the radiation oncology department. Secondly, it is to investigate and describe the understanding of radiation therapists' involvement in sexual health facilitation. Thereafter, the research data will be used to develop a model for facilitating sexual health.

You have been selected for this research because you are eligible according to the inclusion criteria. Your participation requires you to be available for an interview that will last 30 to 45 minutes at a convenient time and venue in the department. All interviews will be audio-recorded and transcribed verbatim. In the interview, you will be asked to share your experiences and observations about the overall sexual health care at the radiation oncology centre where you recently received radiation therapy for prostate cancer.

Before the investigator commences data collection, ethical approval will be sought from the Faculty Research Ethics Committee at CPUT and the Human Research Ethics Committee at the University of the Witwatersrand (Medical School), while gatekeeper permission will be obtained from the Gauteng Department of Health to ensure the research is conducted in good faith. The record of patient names, audio records, and transcripts will be kept securely in the accessed controlled office at the CUT, Free State, and password-protected laptop. The investigator assures to respect the privacy and confidentiality of patients' data throughout the study. The researcher and the study promoters will mainly handle the data. Any other person, such as a biostatistician appointed to handle the data, will sign a confidentiality agreement (see Annexure 12). The findings will be reported anonymously to protect patients' dignity and the hospital's reputation.

Your acceptance or rejection of participation in this study will not affect how your doctors conduct your review in the clinic. Participation is voluntary, and you can withdraw from the study at any time.

Prof. Penelope Engel-Hills and Prof. Hesta Friedrich-Nel will supervise this study. For inquiries, the investigator, supervisors, and ethics committee chair of CPUT can be reached at the contact details below.

This study is anticipated to contribute to the betterment of sexual health care for patients with prostate cancer in radiation oncology departments. Additionally, it may provide radiation therapists with an opportunity for role extension in sexual health to benefit all patients in radiation oncology. The proposed model intends to improve interprofessional practice amongst oncology health professionals on sexual health counselling. Thus, it will enhance person-centred care in radiation oncology amidst oncology staff shortages and increased patient workload.

Mr. Nape Matheko Phahlamohlaka (Doctoral student)
Office No.: +27(0) 51 507 4083 Cell No.: +27(0)82 582 1158
Email: nphahlamohlaka@cut.ac.za or matheko@live.com

**Supervisors' telephone numbers**:

Prof. Hesta Friedrich-Nel : +27(0)51 507 3124
Prof. Penelope Engel-Hills: +27(0)21 959 6917

**Ethics Committee Chairperson telephone number:**

Dr Dirk Bester +27(0)21 959 6760

## Annexure 7: Informed consent form

---

**Research title**:

A model to facilitate supportive care for men's sexual health in patients receiving radiotherapy for prostate cancer

---

**Name of researcher:** Mr Matheko Phahlamohlaka

**Names of supervisors:** Prof. Penelope Engel-Hills and Prof. Hesta Friedrich-Nel

**Ethical clearance :** **CPUT/HW-REC 2020/H15 & M2011123**

I ____________________________________ hereby confirm that I have received, read and understood the information sheet regarding the research study entitled "A model to facilitate supportive care for men's sexual health in patients receiving radiotherapy for prostate cancer".

I understand that my participation is voluntary and that I am free to withdraw from the study at any time without my rights to medical care being violated.

I am aware my personal details will not be published in the research findings. The information given to the investigator will be reported anonymously.

I was given enough time to ask questions, so I declared myself prepared to participate in the study.

Full name of the participant_________________________

Signature of the participant _________________________

Signed at __________________________ this _____day of _______________20___

Signature of the participant _________________________

Signed at __________________________ this _____day of _______________20___

Date and Time____________________________________

Thumbprint of a blind
participant

I have witnessed the accurate reading of the consent form to the potential participant and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

A literate witness or participant must sign (if possible, this person should be selected by the participant and should have no connection to the research team). Illiterate participants should use their thumbprints as their signature.

A copy of this informed consent form will be provided to the participant upon request.

## Annexure 8: Interview guide

**Study title** **:** A model to facilitate supportive care for men's sexual health in patients receiving radiotherapy for prostate cancer.
**Ethics clearance** : **CPUT/HW-REC 2020/H15 & M2011123**
**Investigator** : Mr N.M. Phahlamohlaka
**Telephone (W)** : +27 (0) 57 507 4083
**Cellular No** : +27(0) 82 582 1158

**Patient ID**:______________________ **RT completion date**:_____________

**Interview date**: __________________ **Interview setting**:_________________

### INTERVIEW QUESTIONS

**Research question one (RQ1)**

How was your experience of radiotherapy for prostate cancer?

**Research question two (RQ2)**

How did you experience the help you were given on sexual health during and after RT in the oncology staff?

**Research question three (RQ3)**

What advice did you receive about sexual health while receiving radiation treatment from the radiation therapists?

**Probing questions used to explore patients' experiences (****Not asked verbatim***)**

- Do you think radiotherapy has affected your penile erection?
- How was your desire for sexual intimacy while on treatment?
- Were you open with your wife about your erectile problem?
- How has the relationship with your spouse been at home?
- What was your experience of a conversation with the doctors reporting your sexual health problems in the clinic?
- Did doctors refer you to a men's clinic to help with your situation?
- What medication did you use to treat your erectile problems?

## Annexure 9: Research questionnaire

By completing this questionnaire, I give consent to participate in the survey entitled "A model to facilitate supportive care for men's sexual health in patients receiving radiotherapy for prostate cancer".

I understand this survey is anonymous, so my identity will not be available to the researcher or anyone else.

I understand that should I need counselling support after participating in the present survey, I can reach out to the researcher, who will direct me to a professional counsellor to assist me in this regard. My identity in this process will be held confidential.

**Instructions**:

- The survey will take approximately 15–20 minutes to complete.
- Please write X in the box next to the response that you feel is most correct.
- I would appreciate it if you could complete the questionnaire on your own, without sharing answers with anyone.
- In doing so, the researcher can analyse and submit reliable data to the radiotherapy community.
- Your name will not be known to the researcher, and the biographical information will be anonymous.

**Abbreviations**:

| | |
|---|---|
| CPUT | : Cape Peninsula University of Technology |
| CUT | : Central University of Technology, Free State |
| DUT | : Durban University of Technology |
| RTTs | : Radiation therapists |
| RT | : Radiotherapy |
| UJ | : University of Johannesburg |
| UP | : University of Pretoria |
| PCa | : Prostate cancer |

A1. What is your gender?

| | | | | | |
|---|---|---|---|---|---|
| **Female** | | **Male** | | **Other** | |

A2. What is your age? ____________ years

A3. What is your nationality?

| | | | |
|---|---|---|---|
| **South African** | | **Non-South African** | |

A4. What is your ethnicity?

| | | | | | |
|---|---|---|---|---|---|
| **African** | | **White** | | **Asian** | |
| **Indian** | | **Coloured** | | **Other** | |

A5. What is your home language?

☐ **Afrikaans**
☐ **English**
☐ **isiNdebele**
☐ **isiXhosa**
☐ **isiZulu**
☐ **Sepedi**
☐ **Sesotho**
☐ **Setswana**
☐ **siSwati**
☐ **Tshivenda**
☐ **Xitsonga**
☐ **Other:____________**

A6. What is your highest level of qualification in radiation therapy?

| | | | | | |
|---|---|---|---|---|---|
| **Diploma** | | **Honours degree** | | **Master degree** | |
| **BTech** | | **Bachelor degree** | | **Doctoral degree** | |

A7. What is your current job position?

| | | | | | |
|---|---|---|---|---|---|
| **Junior RTT** | | **Chief RTT** | | **Deputy Director** | |
| **Senior RTT** | | **Assistant Director** | | | |

A8. Where are you currently employed?

| | |
|---|---|
| **Charlotte Maxeke Academic Hospital** | |
| **Steve Biko Academic Hospital** | |

A9. How many years have you worked as a qualified RTT?

Years: _____________ Months: _______

A10. At which tertiary institution did you complete your radiotherapy qualification?

| | | | | | |
|---|---|---|---|---|---|
| **UJ** | | **CPUT** | | **DUT** | |
| **CUT** | | **UP** | | **Other** | |

**SECTION B:** SEXUAL HEALTH COUNSELLING

B1. Sexual health was incorporated into the training and teaching at the tertiary institution where I graduated.

| | | | | | |
|---|---|---|---|---|---|
| **Always** | | **Sometimes** | | **Never** | |
| **Almost always** | | **Seldom** | | | |

B2. In your experience, what is the likelihood of patients with prostate cancer initiating a conversation on sexual health issues?

| | | | | | |
|---|---|---|---|---|---|
| **Always** | | **Sometimes** | | **Never** | |
| **Almost always** | | **Seldom** | | | |

B3. How often do patients with PCa complain to you about sexual health issues?

| | | | | | |
|---|---|---|---|---|---|
| **Always** | | **Sometimes** | | **Never** | |
| **Almost always** | | **Seldom** | | | |

B4. How do you deal with patients with PCa who are questioning you about sexual health issues?

| | | | | | |
|---|---|---|---|---|---|
| **Always avoid them** | | **Sometimes avoid them** | | **Never avoid them** | |
| **Often avoid them** | | **Seldom avoid them** | | | |

B4.1 Please give a reason for your answer to question 4 above.

B5. I can observe non-verbal cues/actions from patients with PCa seeking to communicate sexual health issues.

| | |
|---|---|
| **Yes** | |
| **No** | |

B5.1 If you answered “yes” in relation to question 5, please share some of these cues/actions you have observed from the patients.

B6. How often do you communicate with patients with PCa about the sexual health topic?

| | | | | | |
|---|---|---|---|---|---|
| **Daily** | | **Monthly** | | **Yearly** | |
| **Weekly** | | **Quarterly** | | **Never** | |

B6.1 Please give a reason for your answer to question 6 above.

B7. Gender influences how a healthcare professional approaches the topic of sexual health.

| | | | | | |
|---|---|---|---|---|---|
| **Strongly agree** | | **Neither agree nor disagree** | | **Strongly disagree** | |
| **Agree** | | **Disagree** | | | |

B7.1 Please give a reason for your answer to question 7 above.

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

B8. Religion influences how a healthcare professional approaches the topic of sexual health.

| | | | | | |
|---|---|---|---|---|---|
| **Always** | | **Sometimes** | | **Never** | |
| **Very often** | | **Seldom** | | | |

B8.1 Please give a reason for your answer to question 8 above.

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

B9. Culture influences how a healthcare professional approaches the topic of sexual health.

| | | | | | |
|---|---|---|---|---|---|
| **Always** | | **Sometimes** | | **Never** | |
| **Very often** | | **Seldom** | | | |

B9.1 Please give a reason for your answer to question 9 above.

______________________________________________________________________

______________________________________________________________________

______________________________________________________________

______________________________________________________________

B10. In your experience, at what stage are patients with PCa most likely to initiate sexual health conversations to report their challenges?

| | | | | | |
|---|---|---|---|---|---|
| **Before starting RT** | | **During RT** | | **After completion of RT** | |
| **Before, during and after RT** | | **During and after RT** | | **At no time** | |

B10.1 Please state your reasons for your selection in question 10 above.

______________________________________________________________

______________________________________________________________

______________________________________________________________

______________________________________________________________

B11. In your opinion, indicate the appropriate period which is suitable to initiate a sexual health conversation with patients with PCa.

| | | | | | |
|---|---|---|---|---|---|
| **Before starting RT** | | **During RT** | | **After completion of RT** | |
| **Before, during and after RT** | | **During and after RT** | | **At no time** | |

B12. Select individuals you believe are responsible for talking to patients with PCa about their sexual health issues in the radiation oncology department. ***N.B You can have more than one answer to this question.***

☐ **Radiation therapists**
☐ **Radiation oncologists**
☐ **Oncology nurses**
☐ **Clinical psychologists**
☐ **Social workers**
☐ **Other**

B12.1 If other, please specify: ______________________

B13. The RTTs often avoid addressing sexual health issues with patients with PCa.

| | | | | | |
|---|---|---|---|---|---|
| **Strongly agree** | | **Neither agree nor disagree** | | **Strongly disagree** | |
| **Agree** | | **Disagree** | | | |

B13.1 Provide reasons why this might be the case:

**a)** ______________________________
**b)** ______________________________
**c)** ______________________________
**d)** ______________________________
**e)** ______________________________

B14. I am aware of sexual health counselling services available for patients with PCa at my workplace.

| | | | | | |
|---|---|---|---|---|---|
| **Not at all aware** | | **Moderately aware** | | **Extremely aware** | |
| **Slightly aware** | | **Very aware** | | | |

**SECTION C:** RADIATION THERAPISTS' ATTITUDES REGARDING SEXUAL HEALTH

C1. I am adequately prepared to initiate sexual health conversations with patients with PCa.

| | | | | | |
|---|---|---|---|---|---|
| **Strongly agree** | | **Neither agree nor disagree** | | **Strongly disagree** | |
| **Agree** | | **Disagree** | | | |

C2. RTTs can build good relationships with patients with prostate cancer, giving patients the freedom to talk to them about everything.

| | | | | | |
|---|---|---|---|---|---|
| **Strongly agree** | | **Neither agree nor disagree** | | **Strongly disagree** | |
| **Agree** | | **Disagree** | | | |

C3. Radiation therapists are frontline workers who advise patients with PCa about acute treatment responses.

| | | | | | |
|---|---|---|---|---|---|
| **Strongly agree** | | **Neither agree nor disagree** | | **Strongly disagree** | |
| **Agree** | | **Disagree** | | | |

C4. It is important that radiation therapists prioritise sexual health while counselling patients with PCa.

| | | | | | |
|---|---|---|---|---|---|
| **Essential** | | **Moderate priority** | | **Low priority** | |
| **High priority** | | **Neutral** | | **Not a priority** | |

C4.1 Please motivate your answer to question 18:

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

**SECTION D**: PROFESSIONAL DEVELOPMENT

D1. RTTs have a role to play in promoting sexual health counselling.

| | | | | | |
|---|---|---|---|---|---|
| **Strongly agree** | | **Neither agree nor disagree** | | **Strongly disagree** | |
| **Agree** | | **Disagree** | | | |

D2. I know and understand the scope of patients with PCa counselling for RTTs.

| | | | | | |
|---|---|---|---|---|---|
| **Strongly agree** | | **Neither agree nor disagree** | | **Strongly disagree** | |
| **Agree** | | **Disagree** | | | |

D3. The role of RTTs in sexual health counselling for patients with PCa is not well defined.

| | | | | | |
|---|---|---|---|---|---|
| **Strongly agree** | | **Neither agree nor disagree** | | **Strongly disagree** | |
| **Agree** | | **Disagree** | | | |

D4. I support the role of extension in sexual health facilitation for RTTs.

| | | | | | |
|---|---|---|---|---|---|
| **Strongly agree** | | **Neither agree nor disagree** | | **Strongly disagree** | |

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| **Agree** |  | **Disagree** |  |  |  |

D5**.** In your opinion, what kind of support is required to assist RTTs in dealing with the sexual health of patients with PCa?

**a)** ____________________________________________
**b)** ____________________________________________
**c)** ____________________________________________
**d)** ____________________________________________

D6**.** What do you think needs to be done to develop a comprehensive oncology counselling programme that also considers patients with prostate cancer's sexual health concerns?

**a)** ____________________________________________

**b)** ____________________________________________

**c)** ____________________________________________

**d)** ____________________________________________

**——— THE END ———**

**THANK YOU FOR YOUR PARTICIPATION**

## Annexure 10: Letter of invitation to expert panellist to evaluate the model

### EVALUATION OF MODEL TO FACILITATE SUPPORTIVE CARE FOR MEN'S SEXUAL HEALTH IN PATIENTS RECEIVING RADIOTHERAPY FOR PROSTATE CANCER

**Dear Sir/Madam**

My name is Nape Matheko Phahlamohlaka, a doctoral student at Cape Peninsula University of Technology registered for the qualification of Doctor of Radiography. I would like to invite you to participate in an expert panel meeting to evaluate a model to facilitate supportive care for men's sexual health in patients receiving radiotherapy for prostate cancer. A briefing meeting will occur online using Microsoft Teams on 15 March 2024 at 14h45 (CAT); the meeting will last at least 60 minutes.

The abovementioned model was developed as a result of the unclear practice of involvement of radiation therapists in facilitating supportive care for men's sexual health as part of routine counselling of patients undergoing radiotherapy for prostate cancer. Attached to this letter is a first draft of a supportive care model to facilitate men's sexual health due for evaluation.

Your participation in this model evaluation is voluntary, and if you decide to join the meeting, that will be regarded as giving implied consent. However, if you decide to participate, you are free to withdraw at any time without giving a researcher any reason. You will not be paid or rewarded to participate in the model evaluation.

During the meeting, I will make a PowerPoint presentation to give the panel a background on the study and a detailed description of the model. Thereafter, following the question-and-answer session, you will be requested to evaluate the model and to give feedback in written or electronic format by completing the electronic evaluation form accessible through the link below:

https://docs.google.com/forms/d/10oFfd24bqjNWB1h0fmgGxa5E2wdUj9YIpzsAZq5qrzI/edit

Kindly complete the anonymous model evaluation form after attending the online meeting. This evaluation process is confidential, and your feedback would be greatly appreciated by 22 March 2024. You will also be able to access the results through the same link provided above.

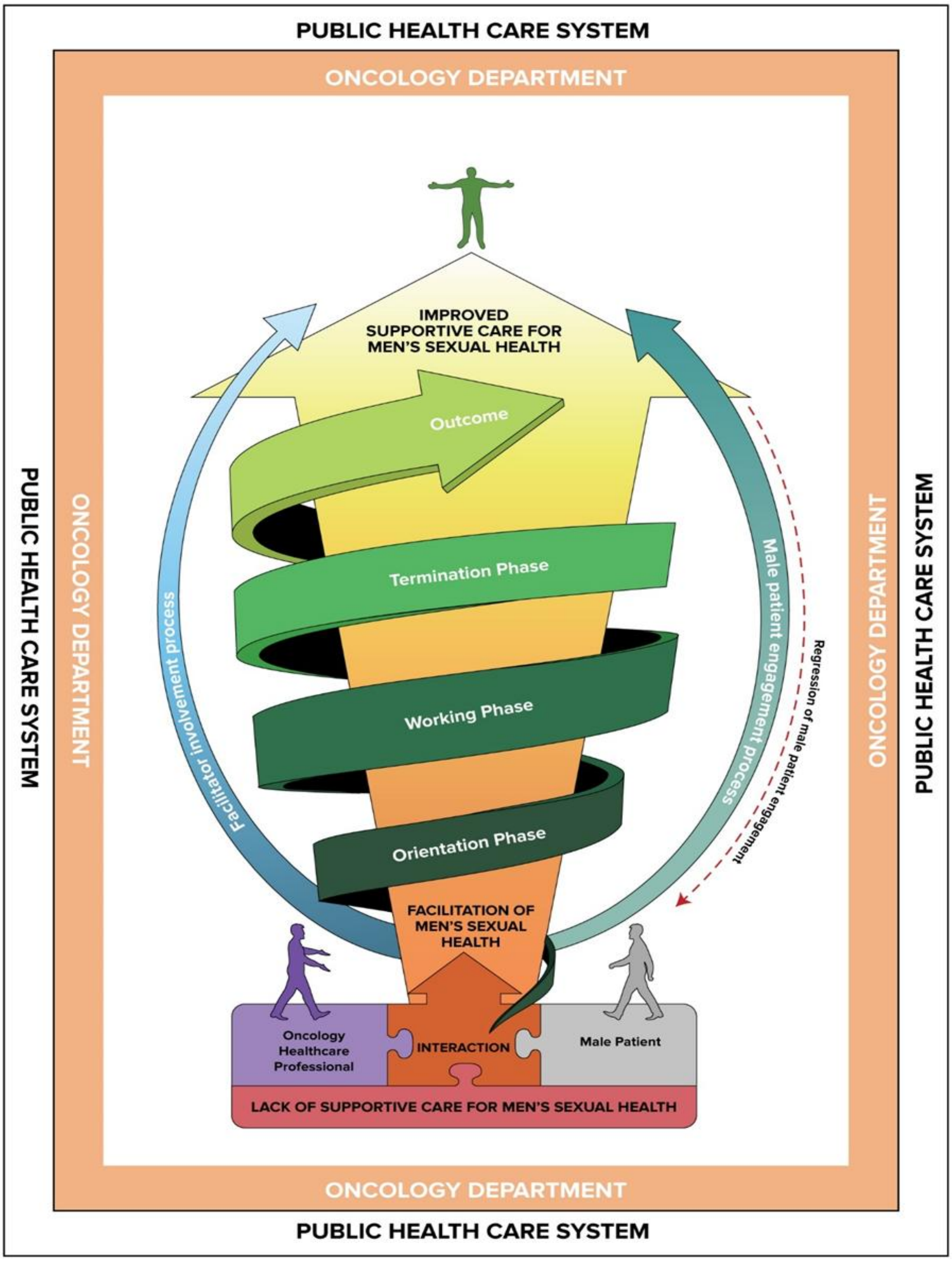
You can reach the chairperson of the CPUT Health and Wellness Sciences Research Ethics Committee at +27(0) 21 959 6917 or my researcher supervisor, Prof. Penelope Engel-Hills, at +27(0) 21 959 6570, if you have any questions or concerns about the study or your involvement in it.

Your time and effort in participation is highly valued and greatly appreciated.

Yours thankfully,

Mr. Nape Phahlamohlaka

## Annexure 11: First draft of the model sent to expert panellists for evaluation



## Annexure 12: Confidentiality agreement

Cape Peninsula
University of Technology

### Confidentiality agreement

I, C. J. Hudson, hereby declare that I understand and agree to the following conditions about the translation of the interviews or the transcription of the audio recordings.

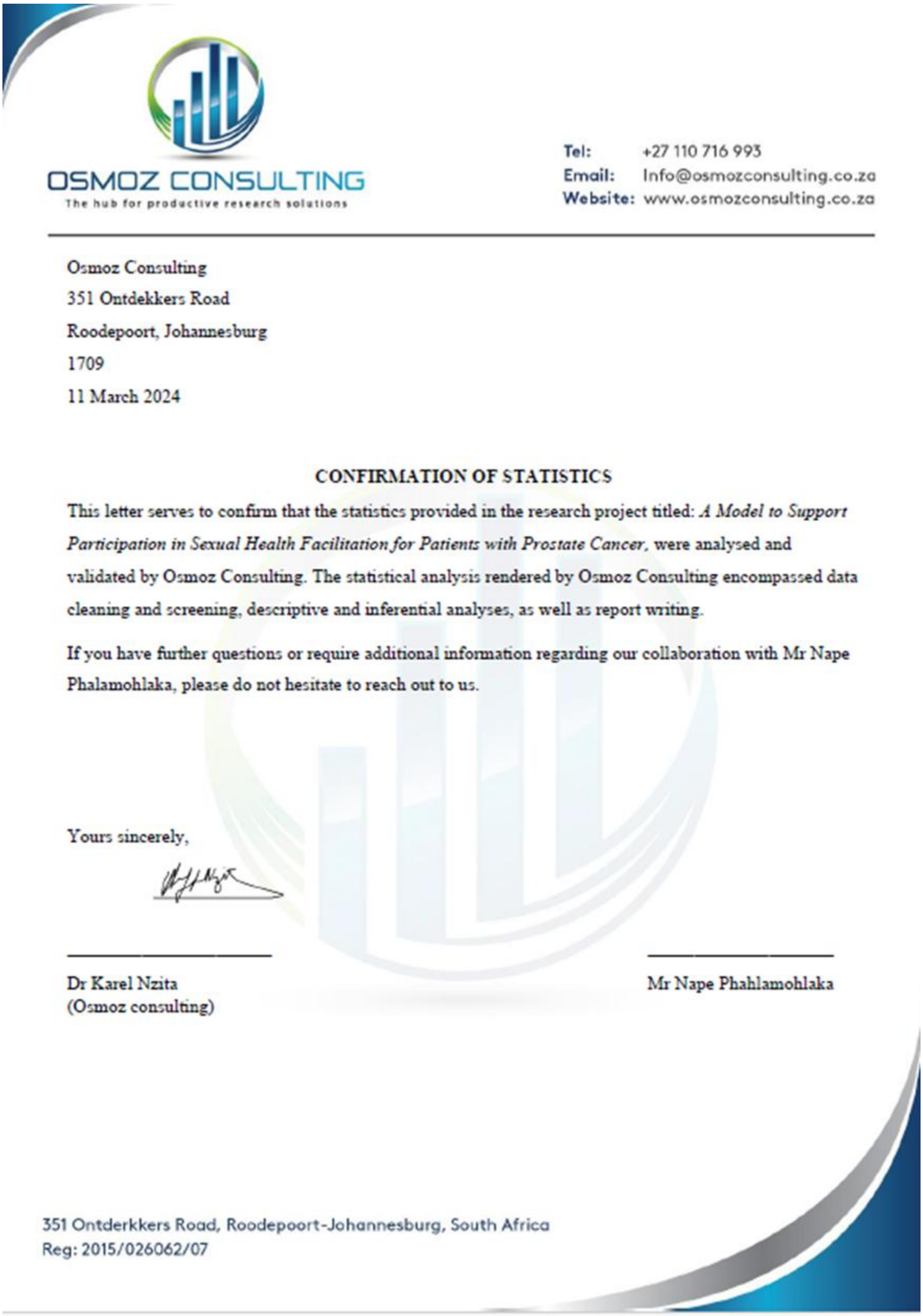
1. I understand that the audio recordings are received for transcribing records of interviews held with the participants for the purpose of a research study.
2. I am aware that the identities of the participants and the radiation oncology departments, as well as the content of the interviews, remain confidential and will not be passed on to a third party.
3. I promise to treat all audio recordings received as confidential content to which only the investigator, supervisors, translator, transcriber, and/or regulatory authorities can access them. I will keep the audio recordings and transcribed data secure on a password-protected laptop during transcription.
4. I promise to return all copies to the investigator after transcribing and translating the interviews.
5. I promise to delete all information from my computer once it is sent to the investigator.

Print full name: Chadiba Joel Hudson

Signature:

Date: 06/12/24

## Annexure 13: Confirmation letter from the biostatistician



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Roodepoort, Johannesburg
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11 March 2024

**CONFIRMATION OF STATISTICS**

This letter serves to confirm that the statistics provided in the research project titled: *A Model to Support Participation in Sexual Health Facilitation for Patients with Prostate Cancer*, were analysed and validated by Osmoz Consulting. The statistical analysis rendered by Osmoz Consulting encompassed data cleaning and screening, descriptive and inferential analyses, as well as report writing.

If you have further questions or require additional information regarding our collaboration with Mr Nape Phalamohlaka, please do not hesitate to reach out to us.

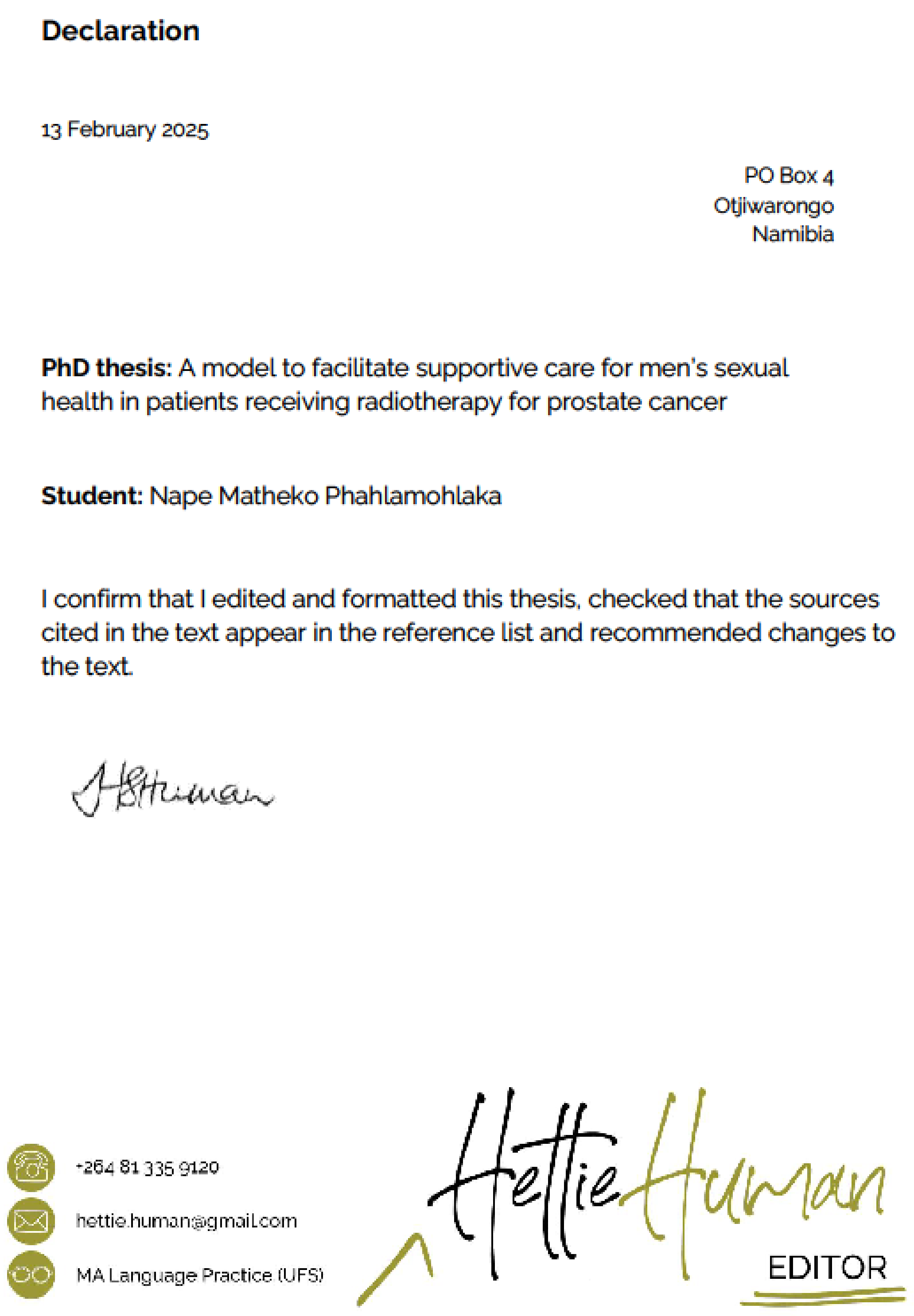
Yours sincerely,

Dr Karel Nzita
(Osmoz consulting)

Mr Nape Phahlamohlaka

351 Ontderkkers Road, Roodepoort-Johannesburg, South Africa
Reg: 2015/026062/07

## Annexure 14: Confirmation letter from language editor



### Declaration

13 February 2025

PO Box 4
Otjiwarongo
Namibia

**PhD thesis:** A model to facilitate supportive care for men's sexual health in patients receiving radiotherapy for prostate cancer

**Student:** Nape Matheko Phahlamohlaka

I confirm that I edited and formatted this thesis, checked that the sources cited in the text appear in the reference list and recommended changes to the text.

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MA Language Practice (UFS)

Hettie Human
EDITOR