

Exploring the Influence of Policies and Strategies on the Recruitment and Retention of Radiographers in the Public Health Sector of KwaZulu-Natal, South Africa

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ABSTRACT

Introduction

The recruitment and retention of radiographers in the public health sector of KwaZulu-Natal (KZN), South Africa, pose considerable challenges. Effective policies and strategies are essential for tackling workforce deficiencies and guaranteeing high-quality radiography services.

Purpose

This study examines existing policy documents to assess their impact on the recruitment and retention of radiographers in KZN.

Methods

A comprehensive qualitative document analysis was conducted, examining key national, provincial, and institutional policies pertaining to the recruitment and retention of radiographers. A thematic analysis was performed to identify recurring patterns, policy gaps, and the overall efficacy of these strategies in addressing workforce recruitment and retention challenges.

Results

The analysis revealed several core themes affecting employee attraction and retention, including *policy consistency*, *monetary incentives*, *opportunities for professional growth*, and *the quality of working conditions*. Disparities in policy execution and the lack of adequate monetary incentives were recognized as substantial obstacles. Furthermore, the assessment emphasized the necessity of implementing customized regulations that specifically target the unique requirements of radiographers working in rural and underserved regions.

Conclusion

Clear and effectively executed policies are vital for improving the recruitment and retention of radiographers in the public health sector of KZN. Policymakers must prioritize comprehensive frameworks encompassing competitive remuneration, opportunities for professional advancement, and enhanced working conditions to establish a resilient radiography workforce.

INTRODUCTION

Radiography is an essential component of diagnostic and therapeutic healthcare services. Radiology significantly impacts disease management by providing clinicians with precise diagnostic tools and techniques (McAdams & McNally, 2021). Diagnostic imaging provides critical structural details that enable early-stage diagnosis, ultimately improving patient outcomes. The radiography profession encompasses four main disciplines: Diagnostic Radiography, Nuclear Medicine, Radiotherapy, and Ultrasound. Medical practitioners rely heavily on radiographers to deliver accurate diagnostic tests to formulate appropriate treatment plans (Durban University of Technology [DUT], 2020). Beyond technical imaging, radiographers play a pivotal role in delivering emotional and physical support while preparing patients for diagnostic procedures (McNulty et al., 2016). Despite their critical contributions, radiographers remain under-resourced and overlooked in healthcare planning and strategic workforce management (Khoza et al., 2018; Kinman et al., 2020).

The recruitment and retention of skilled healthcare workers present a persistent challenge affecting healthcare access and population health outcomes (Abelsen et al., 2020). Globally, the operational capacity of health systems is threatened by personnel shortages and maldistribution (Britton et al., 2017). The projected global healthcare worker shortage of 15 million by 2030 is expected to reflect an exponential deficit in radiographer numbers (Liu et al., 2017)—a vulnerability starkly highlighted during the COVID-19 pandemic. In South Africa, the scarcity of radiographers drives severe maldistribution across the sector, particularly in public, rural, and remote facilities where service provision is most compromised (Britton et al., 2017).

Several factors contribute to the ongoing deficit of radiographers, including ineffective planning, limited health budgets, international migration, insufficient graduate output, limited employment posts, uncompetitive salaries, poor working conditions, inadequate supervision, and sparse opportunities for professional development (Chipere & Nkosi, 2019; Khoza et al., 2018). Consequently, radiographers in South Africa face severe burnout and workload pressures, managing

patient volumes that should ideally be distributed across a substantially larger workforce (Chipere & Nkosi, 2019; Mohammadiaghdam et al., 2020).

In KwaZulu-Natal (KZN), the urgent need for radiographers is evident in high vacancy rates and excessive clinical workloads (KZN Department of Health [KZNDH], 2019). The consequences are directly visible in prolonged patient waiting times for specialized radiology services across KZN public hospitals (Van Dyk, 2018). Overall, radiological service delivery within the province has been severely compromised by chronic issues surrounding personnel recruitment and retention (Khoza et al., 2018).

Gap Statement

Despite the critical role radiographers play in healthcare delivery, the public health sector in KwaZulu-Natal struggles to recruit and retain these professionals. Existing literature has predominantly focused on general healthcare workforce shortages. Detailed analyses evaluating the specific impact of existing policies and strategies on radiographer recruitment and retention remain scarce. This empirical gap hinders policymakers and healthcare administrators from designing evidence-informed interventions tailored to stabilize the radiography workforce.

Problem Statement

The KwaZulu-Natal public health sector faces severe operational difficulties due to radiographer shortages, negatively impacting patient outcomes and health system efficiency. Although various human resource management policies and strategies have been enacted over time, their efficacy in achieving workforce stability among radiographers remains unverified. Without a clear understanding of how these policies function in practice, the public health sector will continue to suffer from persistent staffing deficits, heightened workload stress among remaining personnel, and degraded service delivery. This study systematically evaluates policy documents to assess their impact on the radiographer workforce, providing actionable evidence to inform sustainable staffing solutions.

METHODS

Design and Context

This study utilized a qualitative document analysis design, chosen for its capacity to offer in-depth evaluations of policy formulation and implementation dynamics regarding radiographer recruitment and retention in KZN's public health sector. This approach facilitates a contextual analysis of the broader social, political, and historical factors influencing policy development. By analyzing institutional strategies, government reports, and statutory policy documents, the study evaluated critical healthcare workforce issues including resource allocation, systemic staffing shortages, and policy implementation barriers.

The study examined how Human Resources for Health (HRH) recruitment and retention policies, strategies, and interventions evolved over a 26-year post-apartheid period (1994 to 2020). Identified interventions were categorized using the World Health Organization (WHO) Global Recommendations framework:

- i. Educational interventions
- ii. Regulatory interventions
- iii. Financial incentives
- iv. Professional/Personal support interventions

National policy frameworks were systematically compared against provincial-level operational guidelines in KZN. Policy implementation data were analyzed relative to on-the-ground operational realities, including active personnel figures and workforce alignment with population disease burdens.

Eligibility Criteria

- I. **Inclusion Criteria:** Primary policy documents, strategic plans, published guidelines, and official reports developed by the National Department of Health (NDOH) and KZNDOH between 1994 and 2020 targeting healthcare staffing, population health needs, and public sector radiography management.
- II. **Exclusion Criteria:** Inactive/repealed policies, documents non-applicable to the public health

sector, and strategic plans lacking operational implementation frameworks.

Data Sources and Gathering

Primary data sources were collected from official public portals, including the NDOH, KZNDOH, and Statistics South Africa websites. Secondary data were sourced through systematic literature searches covering radiographer workforce dynamics, public sector recruitment strategies, and government retention frameworks.

Rigour and Trustworthiness

To ensure analytical rigor and credibility:

- A. **Inter-coder Reliability:** Two independent researchers independently coded the document sample and resolved interpretive discrepancies through consensus discussions.
- B. **Peer Debriefing:** Methodological steps and preliminary analytical findings were regularly reviewed with external health systems researchers to validate interpretive accuracy.

Data Analysis

Textual content was extracted, organized, and categorized into thematic domains aligned with national and provincial health recruitment strategies. Qualitative content analysis techniques were employed to extract pertinent excerpts, direct quotations, and policy provisions. These data points were synthesized to identify systemic factors influencing policy execution and workforce sustainability within KZN.

RESULTS

Statutory and Legislative Mandates

The legal mandate governing healthcare service delivery and human resource management in South Africa stems from the Constitution of the Republic of South Africa (1996) and the National Health Act 61 of 2003, alongside supplementary legislative frameworks passed by Parliament under Sections 9, 12, and 27 of the Constitution. Key statutory drivers include:

- a. Constitution of the Republic of South Africa, Act 108 of 1996
- b. Public Service Act 103 of 1994

- c. Labour Relations Act 66 of 1995
- d. Employment Equity Act 55 of 1998
- e. Skills Development Act 97 of 1998

Constitution of the Republic of South Africa (Act 108 of 1996)

Chapter 10, Section 195(1)(h)–(i) mandates that public administration foster effective career development and human resource management practices to maximize human potential. Recruitment must be objective, fair, merit-based, and designed to redress historical imbalances. Furthermore, Section 196(4)(c) empowers the Public Service Commission (PSC) to propose measures ensuring efficiency and organizational effectiveness across public sector entities.

Public Service Act 103 of 1994 (as Amended)

Section 7(a)–(b) defines executive powers regarding internal departmental structuring, appointments, performance monitoring, discipline, and terminations. Section 7(3)(b) places the responsibility for departmental administration, efficient staff deployment, and training directly on the Head of Department (HOD). Aligned with Constitutional mandates, Section 11 requires that all appointments, promotions, or transfers evaluate candidates based on training, skills, competence, knowledge, and equity considerations.

Departmental Planning and Recruitment Toolkits

Employment Equity and Performance Planning

The KZNDOH Annual Performance Plans (2015/16–2019/20 cycles) explicitly prioritized filling essential operational posts, including radiography positions. However, recurring operational barriers compromised implementation:

- a) Treasury-mandated budget ceilings on Compensation of Employees (CoE) restricted post-establishment.
- b) Capacity deficits impaired primary healthcare (PHC) outreach, district hospital package delivery, and clinical governance.
- c) Mentorship programs, leadership development, and managerial capacity remained underdeveloped.
- d) **Key Finding:** Although the KZNDOH identified critical HRH recruitment and retention bottlenecks in 2017/18, the 2019/20 Annual Report revealed that key planned interventions were not fully realized due to financial constraints.

Toolkit on Recruitment and Selection in the Public Service

The public service toolkit provides procedural guidelines for hiring. Effective recruitment relies on precise job descriptions, sound HR planning, and service delivery alignment. HRM Circular No. 8 of 2018 assigns responsibility for post-filling directly to division managers. Initiating a post replacement requires submitting an "Annexure 8" form accompanied by:

- Validated Job Description
- Official Approval for Unfreezing the Post
- Employment Equity Target Alignment
- Selection Committee Composition
- Scheduled Shortlisting and Interview Dates

To minimize service disruptions, recruitment procedures (unfreezing, advertising, shortlisting, and interviewing) must initiate immediately upon an incumbent tendering notice of resignation (KZNDOH, 2018).

Table 1:
Key Policy Frameworks Impacting HRH in South Africa (1994–2020)

Policy / Framework	Core Directives & Provisions	Identified Impact on Radiography Workforce
HRH Strategy (2012/13–2016/17)	Established 8 national strategic priorities, including workforce intelligence, academic complex strengthening, and rural access expansion.	Highlighted severe lack of electronic database tracking; adopted WHO rural retention interventions.
Rural Allowance Policy (2003/04)	Non-pensionable financial allowance (12%–17% of basic salary) for healthcare workers in designated rural posts.	Temporarily improved rural posting interest, but value eroded over time relative to inflation.
Occupational Specific Dispensation (OSD; 2007/08)	Revised salary structure based on specialty, experience, and performance to retain public sector talent.	Delayed implementation for radiographers (2010); created inter-specialty pay disparities across radiography disciplines.

Scarce Skills Allowance (2009)	10% salary allowance for prioritized professions working in underserved or urban settings.	Withdrawn for radiographers following OSD implementation in 2010, removing a primary financial incentive.
Hospital Revitalization & Equipment Replacement (1999–2015)	Infrastructure modernization and capital equipment acquisition programs to improve workplace quality.	Stagnated post-2015 due to budget reductions; delayed transition to digital radiography systems.

Regulatory, Financial, and Infrastructure Interventions

Figure 1:
WHO HRH Recruitment and Retention Interventions

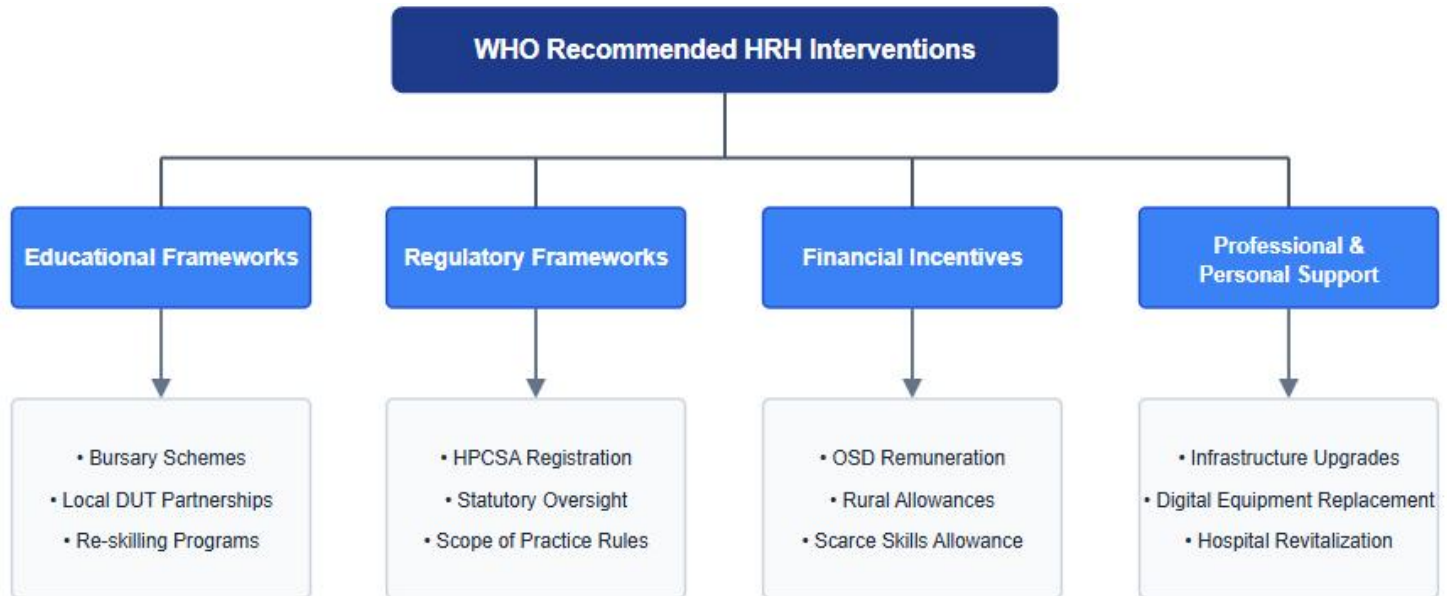
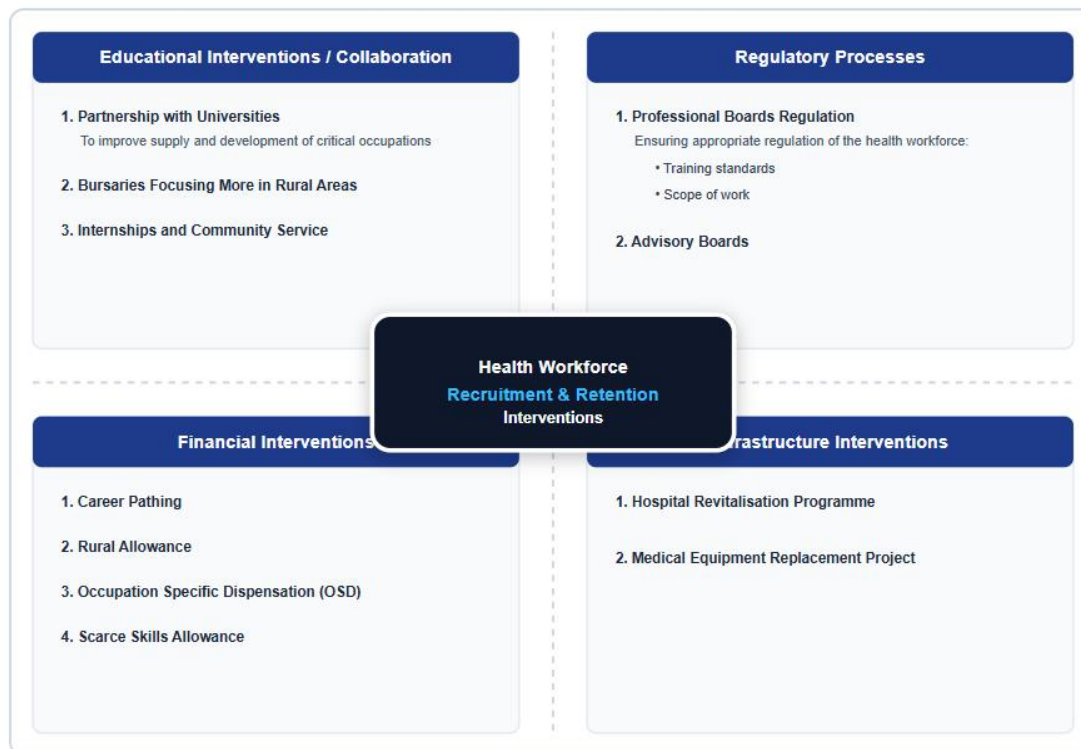


Figure 2:
Conceptual Adaptation of WHO HRH Recruitment and Retention Interventions within the South African Context (Adapted from WHO, 2010).



Educational and Regulatory Dynamics

Health professions in South Africa are regulated by statutory bodies, primarily the Health Professions Council of South Africa (HPCSA), the South African Nursing Council (SANC), and the South African Pharmacy Council (SAPC). These bodies set professional standards, educational requirements, continuous professional development (CPD) criteria, and licensing parameters under the [Health Professions Act of 1974](#) and [National Health Act of 2003](#).

However, institutional lobbying for radiography remains constrained. Unlike nursing or medicine, radiography lacks a dedicated statutory advisory board at both provincial and national health department levels ([NDOH, 2012, 2020](#)).

To address local shortages, international and regional initiatives were attempted:

- i. **International Training (2012/13):** Radiographers were sent to India for two years of clinical training. The project failed due to budget constraints and curriculum mismatch, requiring DUT to retrain candidates locally ([KZNDOH, 2015a](#)).
- ii. **Local Re-skilling (2002/03):** Twenty-nine Darkroom Assistants were re-skilled into professional radiographers via DUT partnerships to build rural retention capacity ([KZNDOH, 2005b](#)). This initiative was not sustained.

Financial Incentives and OSD Disparities

To curb public sector strikes, the government introduced the Occupational Specific Dispensation (OSD) via Resolution 1 of 2007 ([Department of Public Service and Administration \[DPSA\], 2007](#)). While OSD was applied to nursing in 2007, radiographers were only integrated in 2010.

OSD aimed to provide structured career progression based on performance and experience. However, its implementation introduced unintended inequities: three out of the four radiography disciplines were classified as "specialists" and placed on higher remuneration scales, creating internal wage disparities that negatively affected recruitment and retention within general diagnostic radiography ([KZNDOH, 2018](#)). Furthermore, upon OSD

implementation in 2010, the 10% Scarce Skills Allowance previously granted to radiographers was discontinued.

Infrastructure and Medical Equipment

The Hospital Revitalization Programme (launched in 2005) and the Medical Equipment Replacement Project (launched in 1999) initially enhanced working conditions by modernizing diagnostic equipment. In 2014/15, R36.4 million was allocated to purchase 1,185 radiology units ([KZNDOH, 2015a](#)). However, funding from conditional grants declined significantly post-2016, delaying necessary equipment digitalizations and worsening workplace conditions.

Policy Evaluation Systems

System intelligence relies on accurate monitoring and evaluation. The South African public health system utilizes the Personnel and Salary Administration System (PERSAL) for payroll and personnel tracking. However, because PERSAL is primarily a financial accounting database, it lacks the functionality required for comprehensive HRH planning ([NDOH, 2012, 2018](#)). Consequently, health planning remains reactive rather than predictive.

DISCUSSION

This study evaluated the influence of policies and strategies on the recruitment and retention of radiographers in the public health sector of KwaZulu-Natal. The findings demonstrate that while extensive statutory frameworks exist, structural inefficiencies, financial constraints, and regulatory bottlenecks prevent these policies from achieving workforce stability.

Regulatory and Governance Challenges

A central vulnerability identified in the document analysis is the lack of a dedicated statutory advisory body for radiography within national and provincial structures ([NDOH, 2012, 2020](#)). This lack of representation limits the profession's ability to influence health planning, resulting in policies that fail to address the operational realities of diagnostic imaging services ([Khoza et al., 2020](#)).

Furthermore, governance failures within major regulatory bodies – such as the HPCSA – have created administrative backlogs in candidate registration, clinical site accreditation, and foreign professional integration

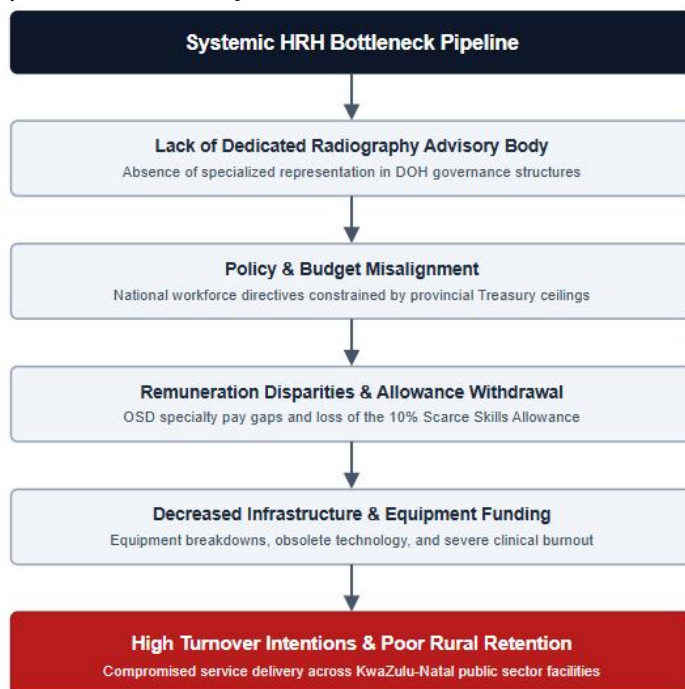
(Mayosi et al., 2015; Rispel et al., 2018). Similar leadership and structural hurdles have disrupted healthcare workforce planning across broader health sub-sectors (Armstrong & Rispel, 2015; Blaauw et al., 2013).

Economic and Working Condition Dynamics

Financial incentives remain a contentious aspect of retention. The termination of the 10% Scarce Skills Allowance following OSD implementation reduced overall financial motivation for radiographers. In addition, internal pay scale disparities introduced by OSD implementation fostered dissatisfaction among non-specialist diagnostic radiographers (KZNDOH, 2018).

While comparative studies in low- and middle-income contexts highlight salary and hardship allowances as vital tools for rural retention (Daneshkohan et al., 2015; Mbemba et al., 2016; Tabrizi et al., 2017), financial remuneration alone is insufficient. Deteriorating clinical infrastructure and aging equipment, caused by conditional grant cuts post-2015, directly exacerbate staff burnout and turn-over intentions (Britton et al., 2017; Chipere & Nkosi, 2019).

Figure 3:
Systemic HRH Bottleneck Pipeline



Policy Misalignment and System Intelligence

A persistent gap exists between national strategic intent and provincial execution. While national strategies mandate filling essential vacancies and establishing Universal Health Coverage (UHC) under the National Health Insurance (NHI) agenda, provincial health departments face severe budget caps on employee compensation (Boseley, 2019; Nkosi & Masondo, 2020).

Furthermore, relying on PERSAL for workforce planning limits data quality, rendering policy evaluations reactive and audit-driven rather than strategic (Van Ryneveld et al., 2020). Without dedicated health workforce intelligence units—such as the WHO-recommended Centre for Health Workforce Intelligence—evaluations occur primarily during crises rather than as part of routine system improvements (Lehmann et al., 2008; World Health Organization [WHO], 2016).

CONCLUSION

This study evaluated the impact of policies and strategies on radiographer recruitment and retention in the public health sector of KwaZulu-Natal. The findings demonstrate that policy execution is hindered by financial constraints, governance gaps, regulatory bottlenecks, and a lack of professional representation for radiographers. Addressing these systemic issues requires targeted policy adjustments and enhanced structural support.

Strategic Recommendations

1. **Policy Alignment Taskforce:** Establish a national-provincial health workforce taskforce to align national strategy with provincial funding constraints, ensuring targeted staffing allocations for radiographers (Khumalo & Naidoo, 2017).
2. **Establishment of Radiography Advisory Bodies:** Form dedicated advisory frameworks at national and provincial levels to include professional radiographers in policy development and operational planning (Khoza et al., 2020).
3. **OSD Framework Review:** Re-evaluate current OSD structures to resolve inter-specialty pay inequities and consider reinstating financial incentives for practitioners in underserved and rural public hospitals (DPSA, 2007; Mbemba et al., 2016).

4. **Workforce Intelligence Modernization:** Transition from reliance on PERSAL to an integrated health workforce database to enable data-driven HRH planning and predictive resource deployment (NDOH, 2020).
5. **Infrastructure Investment:** Prioritize continuous funding for digital equipment modernization to improve diagnostic efficiency and workplace satisfaction.

Use of Artificial Intelligence (AI) Declaration: The authors declare that no generative artificial intelligence was used to produce, modify, or manipulate the primary research data. This manuscript underwent formal editorial and linguistic refinement under the sole responsibility and oversight of the authors.

Authors' Contributions:

- C.N.: Conceptualization, Methodology, Investigation, Formal Analysis, Writing – original draft
- H.M.: Investigation, Validation, Writing – review & editing
- All authors: Conceptualization, Writing – review & editing, and final approval of the manuscript.

Data Availability Statement: All data generated or analyzed during this study are included in this published article [and its supplementary information files]. Additional supporting data are available from the corresponding author upon reasonable request, subject to institutional policies.

Ethical Approval: The study was approved by the Umgungundlovu Health Ethics Research Committee (Ref No: UHERB001/2020).

Informed Consent: All participants provided informed consent prior to inclusion.

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