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Factors associated with burnout among healthcare workers in a rural context, South Africa: a cross-sectional study

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Factors associated with burnout among healthcare workers in a rural context, South Africa: a cross-sectional study

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Masters in Public Health (Rural Health)

Cape Town, June 2023

Declaration

I, Alexandra Moses, declare that this Research Report is my own, unaided work. It is being submitted for the Degree of Masters in Public Health (Rural Health) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

A Moses
_____

(Signature)

9th day of June 2023 in Cape Town

In memory of my grandparents, Alan and Eve Dunnell,

whose passion and encouragement to further my education inspired this degree.

1935 - 2022

Abstract

Background. Healthcare providers (HCP) were at risk of burnout related to high levels of occupational stress in the workplace. However, there was little research in rural and primary care settings in sub-Saharan Africa. This study aimed to describe the individual and workplace factors of public sector HCP working in Mpumalanga province, their experience of burnout and to examine the factors associated with burnout.. **Methods.** A quantitative study design using a cross-sectional survey was employed. The research site was Nkomazi Local Municipality in Mpumalanga Province. All HCPs (n=1 139) working at the primary healthcare clinics, community health centres and district hospitals were invited to participate in the survey. Data were collected between April and September 2022 via a self-administered, electronic questionnaire. A demographic and occupational questionnaire, the General Help Seeking Questionnaire and the Health and Safety Executive (HSE) indicator tool were used to assess individual and workplace factors. Burnout was assessed using the Maslach Burnout Inventory–Human Services Survey. Univariate and multivariate regression analyses were used to examine factors associated with burnout.

Results. Just over a quarter (n=302; 26.5%) of HCP participated. Participants were aged between 23 and 61 years, mostly female (n=252; 83.44%) and nurses (n=235; 77.81%). Most participants (n=215; 71.19%) would seek help if they had an emotional problem, most likely from mental health professionals, and least likely from traditional healers. Increased work-related stress was present due to the demands and roles of HCP. High levels of burnout were observed for Emotional Exhaustion (Median score 26 (IQR: 18)) and Personal Accomplishment (median score 29 (IQR: 9)) but not for Depersonalisation (median score 7 (IQR: 9)). On univariate regression analysis, the individual factor of being married and the workplace factor of increased years of experience were statistically significant to all three subscales of burnout. HSE factors of demands, control, management support, peer support, relationships, role and change were highly statistically significant to Emotional Exhaustion, Depersonalisation and Personal Accomplishment.

On multivariate regression analysis, no individual demographic, occupational or HSE factors were significantly associated with Emotional Exhaustion or Depersonalisation. Personal Accomplishment

improved by 0.49 (95%CI: 0.10-0.89) for every one point increase towards improved work demands, by 0.84 (95%CI: 0.01-1.67) for every point score increase towards improved management support, and by 1.19 (95%CI: 0.48-1.90) for every point score increase towards having improved role.

Conclusions. During 2022, HCPs working in a rural area in South Africa displayed high levels of burnout for Emotional Exhaustion and Personal Accomplishment but not for Depersonalisation. Improvements in work demands, managerial support and role were significantly associated with an increase in the experience of Personal Accomplishment. Further research is recommended to better understand the nuances of the work environment. Solutions should be explored and implemented to prevent burnout, with special consideration given to work demands, managerial support and role clarity as part of the effort to retain rural HCP in the public health system.

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Nomenclature

CHC: Community Health Centres

DOH: Department of Health

GHSQ: General Help Seeking Questionnaire

HCP: Healthcare Provider

HOD: Head of Departments

HSE: Health and Safety Executive

MBI: Maslach Burnout inventor

MBI-HSS: Maslach Burnout Inventory–Human Services Survey

PHC: Primary Healthcare Clinic

REDCap: Research Electronic Data Capture

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Chapter One: Introduction and literature review, aims and objectives

Chapter One explains the phenomenon of burnout through expanding definitions of chronic occupational stress for the public sector healthcare provider (HCP). The occupational environment that HCP within a South African context work is outlined, as well as a review of current literature on the risk and protective factors in the development for burnout. Key literature resources based in the sub-Saharan African context which explored burnout with relation to HCP are expanded. The tools used to measure burnout within literature are discussed. Lastly, the undertaking of this research project is justified before the aims and objectives of the research project are outlined.

1.1 Introduction

The World Health Organization defines burnout as being "a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed" (1). It is characterized by three dimensions: feelings of energy depletion or exhaustion; increased mental distance from one's job or feelings of negativism or cynicism related to one's job; and reduced professional efficacy (1,2). In May 2019, the World Health Organisation classified burnout for the first time as an occupational phenomenon in the International Classification of Diseases (1).

Occupational stress is defined as the response to work demands and pressures which exceed knowledge, capacity and abilities, challenging the ability to cope (3). HCP are susceptible to high levels of occupational stress (4). In sub-Saharan Africa, common sources of stress include staff shortages, insufficient resources and supplies, high workload and hours worked (4).

Prior to 2020, before the onset of COVID-19, burnout was common among HCP in sub-Saharan Africa, with prevalence estimates ranging from 40 to 80% (5). COVID-19 might have negatively affected these estimates. COVID-19 is caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (6). It is a rapidly spreading, highly transmissible virus which causes life-threatening illness (6). COVID-19 has meant that healthcare providers (HCP) at frontline care are vulnerable to increased occupational stress due to exposure to infection, increased workloads and difficult working conditions (7).

The experience of burnout and occupational stress has implications for the wellbeing of HCP, affecting productivity, performance, and turnover (4). Low levels of wellbeing results in absenteeism, exacerbating staff shortages (8). The needs of HCP have to be supported to prevent resignations as a result of burnout (9). This is important on a larger scale in the recruitment and retention of the healthcare work force (9).

Burnout is associated with an increased risk of medical errors and patient safety incidents as well as poor quality of care due to reduced professionalism, resulting in decreased patient satisfaction (5,8). Therefore, burnout among HCP has severe personal and professional consequences, having an effect on the quality and functionality of the health system (5,8).

This study aimed to answer the question "What are the individual and workplace factors of public sector HCPs working in Mpumalanga province, their experience of burnout, and the factors associated with burnout?"

1.2 Literature Review

1.2.1 Risk factors in the development of burnout

Risk factors in the development of burnout are discussed in terms of workplace risk factors and individual risk factors.

Workplace risk factors include long and inflexible hours resulting in frequent direct, personal and emotional contact with large numbers of patients (4). Long working hours increases the risk of poor work functioning and poor health due to having little time to engage in healthy lifestyle behaviours (5). Unfavourable physical working conditions increases the risk of burnout (5). Having a low degree of autonomy within the workplace is another individual risk factor which causes an increased risk for burnout (5). Poor peer relationships, lack of professional recognition or reward, a lack of perceived support and leadership from managers, role ambiguity, increased job demands and work overload have also been found to be related to burnout (4).

A systematic review by Dubale et al. (2019) on burnout among HCP in sub-Saharan Africa confirmed that burnout was associated with factors within the work environment in a more local context (5). Heavy

workloads, staff shortages, difficult work conditions, interpersonal conflict between colleagues, family and conflict in general, and organisational complaints were found to be associated with a likelihood of increased burnout (5). Short-term contracts were found to be associated with lower mental wellbeing due to insecure working arrangements being a major stressor (5). Working overtime and recurrent night duty was frequently associated with burnout (4).

Individual risk factors for burnout include being of the female gender (5). Being female is associated with lower wellbeing and greater Emotional Exhaustion than being male (5). Female HCP may also experience increased stressors with regards to safety at work and the mental burden of juggling family responsibilities (5).

A lack of help-seeking behaviour has been noted as a risk factor for the development of burnout (5). Mental health literacy includes the ability to recognise psychological distress and encompasses the knowledge, beliefs and attitudes around seeking help (10). It has been found in South Africa that individuals experiencing poor mental health wait three to five years before seeking help due to stigma and embarrassment (10).

Geographically, burnout was found to be common in HCP in rural areas in sub-Saharan Africa (5). This was due to HCP having less access to social support from family and colleagues (5). HCP working rurally are found to be caring for a disproportionally greater number of patients due to HCP migration to urban areas, resulting in staff shortages (5).

1.2.2 Protective factors in the development burnout

Protective factors in the development of burnout will be discussed in terms of individual risk factors and workplace risk factors.

Individual protective factors include emotional intelligence, including beliefs about causation and experience (5). It is argued that job satisfaction can either be a significant predictor of burnout or that it is the outcome variable predicted by work-related stress and burnout (4). Job satisfaction has also been found to be an intervening variable between burnout and general health, meaning that it could either be a risk or protective factor (4).

Older age is a strong protective factor against the experience of distress, Emotional Exhaustion, and Depersonalisation (5). Older age, coupled with years of experience working within a sector, was associated with higher wellbeing (5). This could be as a result of the development of effective coping skills over time, or it could be a skewed result due to less resilient HCP leaving the sector (5).

Religiosity and spirituality as a coping mechanism are protective factors linked with higher wellbeing and Personal Accomplishment, and lower Emotional Exhaustion (11). Orientation towards religious beliefs facilitate positive growth, despite adversities experienced (11).

Social support was found to be protective against burnout in HCP (5). Social support included adequate support from management (5). The perception of management's commitment to employees' health and support provided within the work environment were protective from burnout, specifically from reduced Personal Accomplishment (5).

1.2.3 Key literature sources examining burnout

The following section discusses key literature resources within the sub-Saharan African and South African context. Most studies conducted on the theme of burnout are from high-income countries, with research situated in Africa severely underrepresented (8).

A systematic review by Gray et al. (2019) on workplace-based organizational interventions to promote mental health among healthcare workers found that 51 of 60 studies analysed were situated in high-income countries (8). Only one study was situated in Africa (8). Most studies involved only one cadre of HCP, with the most common cadre being nursing staff (8). Twenty-one of the 60 studies included more than one type of HCP as research participants (8). Constructs used to describe mental health examined in the studies of this systematic review mainly included burnout (27 studies), stress (19 studies) and job satisfaction (14 studies) (8).

In a systematic review conducted by Khamisa et al. (2013) on burnout in relation to specific contributing factors among nurses, 70 studies were found to identify the causal nature and direction of relationships between work related stress, burnout, job satisfaction and general health (4). Of these 70 studies, only three were based in Africa, with one study based in South Africa (4). Ten articles were found to confirm

the relationship between work-related stress and burnout (4). The ten studies were based predominantly in high-income countries such as Israel, China and Japan, with one study based in Nigeria (4).

In their systematic review of sub-Saharan African studies, Dubale et al. found 27 quantitative studies based in South Africa, only one of which was conducted at a rural hospital and four at the district level (5). Seven studies examined burnout among physicians, with one study examining burnout in medical students; 15 studies examined burnout among nurses, with two of those studies among nursing students; two studies examined burnout among paramedics, with one of those involving paramedic students; and one study examined burnout among oral hygiene students (5). Only two studies examined combined populations of HCP: one based in a trauma unit, and one based at public and private hospitals (5).

With regards to the impact of COVID-19, a rapid scoping review conducted by Robertson et al. (2020) on mental health of HCP during the COVID-19 outbreak found that HCP experience high levels of mental health distress during infectious disease outbreaks (7). It was recommended from this report that more research needs to be conducted on mental health constructs of HCP within the African context, particularly within the primary health setting (7).

A recent study published in December 2021 by Hain et al., found high levels of burnout, depression and anxiety in medical doctors working within the district setting in rural KwaZulu-Natal Province, South Africa (12). Burnout, depression and anxiety were all associated with the intention to leave the public sector in the next 2 years, affecting the retention of the rural workforce (12). Data collection for the study by Hain et al. was conducted during August and September 2020, which coincided with the end of the first wave of COVID-19 in South Africa (12). The authors thus inferred that the participants' responses may have been influenced by recent experiences of working through the COVID-19 wave (12).

It is therefore noted that there is a severe dearth of studies examining burnout among HCP based within the rural, primary health setting in the South African context, demonstrating the need for further research, particularly within the milieu of the COVID-19 pandemic.

1.2.4 Measuring burnout

The majority (19) of the studies based in South Africa in the systematic review by Dubale et al. used the Maslach Burnout inventory (MBI) as a method to measure burnout, with seven studies using the concerning subscales of Emotional Exhaustion, Depersonalisation, and Personal Accomplishment that are responded to on a seven-point Likert scale (2,5). Emotional Exhaustion is a 9-item scale assessing feelings of being emotionally overextended and exhausted by one's work where higher scores correspond to greater experienced burnout (2). Depersonalization is a 5-item scale measuring an unfeeling and impersonal response toward recipients of one's service, care, treatment, or instruction (2). Higher scores correspond to greater degrees of experienced burnout. Personal Accomplishment is an 8-item scale assessing feelings of competence and successful achievement in one's work with people (2). Lower scores correspond to greater experienced burnout (2).

However, there have been no prior studies in sub-Saharan Africa to validate the MBI in HCP and it has been suggested that there may be different cultural interpretations of questions related to the construct of burnout (5). Despite this, the MBI remains the most widely used measurement of burnout within this field of research, making results more easily generalisable (5).

Other measures for burnout include the Copenhagen Burnout Inventory which includes three scales measuring personal burnout, work-related burnout and client-related burnout (13). This scale has been found to have high internal reliability, but is less widely used in research on burnout as compared to the MBI (13). The Professional Quality of Life scale is another method to measure burnout (14). It includes three scales measuring compassion satisfaction, burnout and compassion fatigue/secondary trauma (14). However, this scale of burnout and compassion fatigue has been found to have inadequate measurement properties and has been recommended to be used with caution (14).

1.2.5 Justification

There is little research on the factors associated with burnout in the workplace within low- and middle-income countries (8). The drivers of burnout are poorly understood, with predominant exploration of two-way relationships between work-related stress, job satisfaction and general health (4,8).

The current context justifies the need for this study as HCP in South Africa are faced with the management of a quadruple burden of disease, compounded with the COVID-19 pandemic. More attention needs to be given to HCP burnout in a rural, district-level setting (5).

In conclusion, it has been found in the literature that burnout among HCP negatively affects health systems and patient care (5). The factors associated with burnout among HCP in a rural, South African setting need to be understood, so that support and interventions offered to HCP can be effective (8). Supporting HCP within the context of the workplace will assist in the Department of Health (DOH) vision of delivering 'patient-centred quality of care' (8,9).

1.3 Aim

The aim of the research was to describe the individual and workplace factors of public sector HCP working in Nkomazi Local Municipality, Mpumalanga Province, their experience of burnout, and to examine the factors associated with burnout.

1.4 Objectives

The objectives of the study were to:

1.4.1. Describe individual and workplace factors of HCP employed by the DOH within the Nkomazi Local Municipality in 2022.

1.4.2 Describe the experience of burnout according to scores on Emotional Exhaustion, Depersonalisation and Personal Accomplishment among HCP employed by the DOH within the Nkomazi Local Municipality in 2022.

1.4.3. Examine the association of burnout with individual and workplace factors among HCP employed by the DOH within the Nkomazi Local Municipality in 2022.

Chapter Two: Materials and Methods

Chapter Two discusses the materials and methods used to conduct the research outlined in Chapter One. The study design, study site and sampling strategy are discussed, before expanding on the various methods of measurement of the different variables within the study. Data management and data analysis are discussed, including the control of data quality. Finally, ethical considerations are outlined, incorporating a description of the various ethical clearances obtained which were required to conduct this study.

2.1 Study design

A quantitative study design using a cross-sectional survey was employed. A descriptive, analytical approach was used to identify the factors associated with burnout among rural HCPs.

2.2 Study sites

The research was conducted in the Nkomazi Local Municipality, which is situated in the eastern part of the Mpumalanga Province (Figure 2.1). This study setting was chosen due to it being a rural, district-level context known to the principal investigator (Mrs A. Moses), who worked at one of the district hospitals and is in contact with some senior HCPs at both hospitals.

Nkomazi Local Municipality has 26 primary healthcare clinics, six community health centres, and two district hospitals. The district hospitals, which render level-one hospital services, are Shongwe Hospital (a 350-bed facility) and Tonga Hospital (a 230-bed facility) (15). Healthcare facilities in Nkomazi Local Municipality serve a population of 410 907 people comprising 103 965 households (15).



Figure 2.1: Map of Nkomazi Local Municipality (15)

2.3 Study population and sample

The study population comprised HCP employed by the DOH and working in Shongwe and Tonga hospitals and the selected CHCs and PHC clinics in the Nkomazi Local Municipality, Mpumalanga in 2022. The total number of HCP employed within the Nkomazi Local Municipality was 1 139 (980 nursing professionals, 36 doctors and 108 allied health professionals) according to human resource data from March 2021. HCP included participants who fell under any of the following professional cadres: Audiology, Biokinetics, Clinical Associates, Dentistry, Dietetics, Medical Practitioners and Specialists, Medical Technology, Medical Orthotists and Prosthetics, Nursing Professionals, Occupational Therapy,

Pharmacy, Physiotherapy, Podiatry, Psychology, Radiography, Social Work, and Speech and Language Therapy.

2.3.2 Inclusion and exclusion criteria

Inclusion criteria: Participants were HCP 18 years and older, employed by the Mpumalanga DOH, working in Shongwe and Tonga hospitals and the CHCs and PHC clinics in the Nkomazi Local Municipality in 2022. HCP included participants as according to the definition in the National Health Act 61 of 2003 (16). Participants included community service professionals.

Exclusion criteria: Participants who are HCP who are currently registered as students and/or who were younger than 18 years of age were excluded.

2.3.3 Sampling Strategy

The total number of HCP employed within the Nkomazi Local Municipality was 1 139 according to human resource data from March 2021. All 1 139 HCP met the inclusion and exclusion criteria and were invited to participate in the survey. The study sample size needed for 95% confidence level was 287, therefore a minimum response rate of 25% was sought.

Participant recruitment took place from April to September 2022. Departmental HODs and clinic facility managers were used in the recruiting of participants; they were contacted via email and telephone in April 2022. HOD and facility managers were requested to assist in distributing the questionnaire to their teams, inviting all clinical staff to respond. Follow-up with the HODs and clinic facility managers was conducted on a monthly basis for the period of four months. Recruitment of participants was also conducted via social media on Facebook groups and via WhatsApp messages to personal contacts of the principal investigator. However, the response from these recruitment methods was poor. Therefore, in August 2022, a field worker was employed to recruit participants in the area.

Training was conducted with the field worker by the principal investigator and regular contact and communication occurred in the period of participant recruitment. This was to ensure quality control and reliable data throughout the data collection period. A debriefing session was held post data collection. The field worker was employed from 15 August to 8 September 2022, visiting 18 sites within the

Nkomazi Local Municipality, recruiting participants from 13 primary healthcare clinics, three community health centres and both district hospitals. The sites were utilised due to ease of access via public transport for the field worker and until the response rate needed for 95% confidence level was reached.

2.4 Measurement

Burnout is the dependent outcome variable and was assessed using the Maslach Burnout Inventory–Human Services Survey (MBI-HSS). The MBI-HSS assesses three core aspects of the burnout syndrome: Emotional Exhaustion, Depersonalisation, and lack of Personal Accomplishment (2). The MBI-HSS consists of 22 statements concerning subscales of Emotional Exhaustion, Depersonalisation, and Personal Accomplishment (2). The Emotional Exhaustion scale consists of 9 items assessing feelings of being emotionally overextended and exhausted by one's work, such as 'I feel emotionally drained from my work', with higher scores corresponding to greater experienced burnout (2). The Depersonalisation scale consists of 5 items measuring an unfeeling and impersonal response towards the recipients of one's service, care, or treatment, such as 'I don't really care what happens to some patients', with higher scores corresponding to greater degrees of experienced burnout (2). The Personal Accomplishment scale consists of 8 items assessing feelings of competence and success in one's work, such as 'I have accomplished many worthwhile things in this job', with lower scores corresponding to greater experienced burnout (2). Items are responded to on a seven-point Likert scale rating how often each item is felt about one's job from 0 'never' to 6 'every day' (2).

The MBI-HSS's internal reliability according to Cronbach's alpha is .90 for Emotional Exhaustion, .79 for Depersonalisation and .71 for Personal Accomplishment (2). The MBI-HSS has been found to have discriminant validity to measure burnout as a distinct construct, distinguished from constructs such as job dissatisfaction, work-related stress, anxiety and anger (2). It was found that burnout (measured by the MBI-HSS) was not influenced by desirability to appear better than one is, despite concerns that feelings described by the tool were contrary to professional ideals (2). The MBI-HSS scale scores of Emotional Exhaustion, Depersonalisation and Personal Accomplishment cannot be combined and are therefore interpreted separately (2).

The MBI manual includes normative data gathered from a large sample of respondents who have completed the MBI-HSS (2). Using this normative data, the relative degree of burnout for a sample can be compared to the average of their occupational subgroups (2). Because the study was conducted in a medical setting, the *Medicine* subgroup was used in the figure to interpret all occupational categories. The normative data is outlined below.

Table 2.1: Means and Standard Deviations for the MBI-HSS Scales

	MBI-HSS Scales		
	Emotional Exhaustion	Depersonalization	Personal Accomplishment
Occupational Subgroups			
Social Services (n=1 538)			
Mean	21.35	7.46	32.75
Std. Dev.	10.51	5.11	7.71
Medicine (n=1 104)			
Mean	22.19	7.12	36.53
Std. Dev.	9.53	5.22	7.34
Mental Health (n=730)			
Mean	16.89	5.72	30.87
Std. Dev.	8.90	4.62	6.37
Other (n=2 897)			
Mean	21.42	8.11	36.43
Std. Dev.	11.5	6.15	7.00

Individual factors included independent variables of socio-demographic details such as age, gender, marital status, ethnicity, highest educational level, religion, citizenship, family residing nearby allowing for psycho-social support, and the number of children a participant has.

Individual factors also included the score from the General Help Seeking Questionnaire (GHSQ), a validated scale consisting of future intentions to seek help from a list of culturally-relevant sources (both formal and informal) (17). The GHSQ uses a matrix format that can be modified according to purpose and need (17). In this study, help sources included four informal source items (e.g. ‘If you were having a personal or emotional problem, how likely is it that you would seek help from a friend?’), three formal source items (e.g. ‘If you were having a personal or emotional problem, how likely is it that you would seek help from a mental health professional like a psychologist, social worker or counsellor?’), two community source items (e.g. ‘If you were having a personal or emotional problem, how likely is it that you would seek help from a traditional healer or community leader?’), an item for no one (e.g. ‘I would

not seek help from anyone.'; reversed score), and an item for other source items (e.g 'I would seek help from another not listed above'). Each item was rated according to a 7-point Likert scale from 1 'extremely unlikely' to 7 'extremely likely'. A higher score indicates higher intentions to seek help from that particular source (17). The GHSQ has been validated in English, showing adequate psychometric properties (internal consistency: 0.67–0.90; test–retest reliability: 0.86) (17). GHSQ scores were summed per participant, with a potential minimum score of 11 and a maximum score of 77. Summed GHSQ scores were an independent variable (17).

Workplace factors such as the occupational profile were generated as an independent variable and included aspects such as occupational category, years employed in health services, years worked in current facility, job status (contract or permanent), facility type, average working hours, and whether the participant engages in shift work and night duty.

The Health and Safety Executive (HSE) is a UK regulatory body responsible for occupational health and safety and has adopted a standards-based approach to addressing work-related stress (18). The HSE has defined six management standards that represent aspects of work (18). The HSE Indicator Tool is based on desired standards being identified and comparing them against actual or current standards (18). The six management standards identified are, if poorly managed, associated with lower levels of health, productivity and well-being and with increased sickness absence (18). The standards are: demands, control, support, relationships, role, and change (18). The HSE indicator tool is a standardised 35-item questionnaire, with items categorised into seven subscales relating to the primary stressors identified by the management standards (18).

The "Demands" subscale includes eight items surrounding issues such as workload, work patterns and the working environment, and are assessed by statements such as 'I have to work very intensively' (19). The "Control" subscale includes six items around how much autonomy the employee has in the way they do their work, and are assessed by statements such as 'I have a choice in deciding how I do my work' (19). The "Peer Support" subscale includes four items surrounding the encouragement and resources provided by colleagues, and are assessed by statements such as 'I get help and support I need from colleagues' (19). The "Managerial Support" subscale includes five items focussing on the support

provided by the organisation and line management, and are assessed by statements such as 'My line manager encourages me at work' (19). The "Relationships" subscale includes four items around the promotion of positive working practices to avoid conflict and dealing with unacceptable behaviour, and are assessed by statements such as 'Relationships at work are strained' (19). The "Role" subscale includes five items on whether employees understand their role within the organisation and whether the organisation ensures that the employee does not have conflicting roles, and are assessed by statements such as 'I am clear what my duties and responsibilities are' (19). The "Change" subscale includes three items on how organisational change is managed and communicated, and are assessed by statements such as 'Staff are always consulted about change at work' (18,19).

Items on each subscale were rated according to a five-point Likert scale, from 1 'never' to 5 'always.' Higher scores reflect better working conditions and less risk of stress at work (19). Working conditions can be compared against average percentile scores from data collected from employees across 39 other public organisations in the UK, with a sample size of 26 382 (19). According to a systematic review by Brookes et. al., the HSE indicator tool is a psychometrically sound tool to explore work-related stress within an organisation, being a reliable measure of potential causes of work-related stress with overall scale reliability of .92 (18,19). The seven HSE Indicator tool subscales were independent exposure variables.

A study conducted by Edwards et al. (2008) includes data gathered from 39 organisations (N=26 382) (19). The mean scores and percentiles across the seven HSE factors from this data allows organisations to place themselves into categories based on their own mean scores (19). The normative data is outlined below.

Table 2.2: Descriptive statistics and percentiles for the HSE Management Standards Indicator Tool (19)

	Demands*	Control	Managerial Support	Peer Support	Relation-ships*	Role	Change
Mean	3.05	3.42	3.47	3.80	3.77	4.18	3.00
Std. Dev.	0.15	0.32	0.19	0.11	0.44	0.12	0.24
Percentiles							
25%	2.97	3.25	3.36	3.73	3.75	4.10	2.83
50%	3.04	3.41	3.49	3.79	3.84	4.18	3.00

75%	3.13	3.67	3.57	3.88	3.98	4.25	3.19

*Scores reversed so that a higher value in the table indicates less risk of stress at work, as is the case in the other factors.

Individual and workplace factors were chosen after analysing existing literature, and included factors that had been of pertinence and researched in other contexts.

2.5 Data collection

Data were collected via a self-administered, electronic questionnaire, to limit in-person contact in compliance with COVID-19 regulations and to assist with ensuring reliable data. The questionnaire was designed on the Research Electronic Data Capture (REDCap) tool hosted at University of Witwatersrand, and included skip patterns to facilitate ease of completion (20). Participants completed the questionnaire online on their desktop computer, laptop, smart phone or tablet. The field worker distributed the link for the online questionnaire as well as hardcopies of the questionnaire, printed from the electronic version. Participants particularly at the hospitals complained of having slow internet connections increasing the time taken to complete the questionnaire online. Participants also did not want to use their own data to complete the questionnaire online. It was therefore decided to use hardcopies of the questionnaire to facilitate the process of completing the questionnaire. The field worker checked that the hardcopy questionnaires were completed in full by participants, and then entered the completed hardcopy questionnaires onto REDCap; data was checked on REDCap by the principal investigator daily.

2.6 Data management and data analysis

Data was entered through the REDCap platform, hosted by the University of Witwatersrand (20,21). REDCap (Research Electronic Data Capture) is a secure, web-based software platform designed to support data capture for research studies, providing 1) an intuitive interface for validated data capture; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for data integration and interoperability with external sources (20,21). Data was exported directly from REDCap to STATA

V.16.1 for analysis. Categorical variables collected were coded numerically and continuous variables were cleaned and standardised in terms of units measured in STATA V.16.1 in preparation for analysis.

Descriptive statistics were used to summarize the characteristics of the data set. Scores on each scale (Emotional Exhaustion, Depersonalisation and Personal Accomplishment) of the MBI-HSS were summed, with higher scores indicating higher degrees of burnout (2). The median and interquartile range was used as the summed scores of each scale was not normally distributed.

Categorical variables of the individual and occupational profiles such as gender, ethnicity, citizenship, family nearby, highest educational level, marital status, religion, facility type, professional category, shift work, night shift, and job status (contract or permanent) were described in relation to frequencies and proportions of the total number of participants.

The summed GHSQ scores were categorised into three categories ranging from 0-30, 31-50 and 51-70.

The HSE Management Standards Indicators according to the summed scores of the six subsections of demands, autonomy, support, relationships, role and change were continuous variables. Continuous variables also included aspects from the individual and occupational profiles such as age, number of children, years employed in health services, years worked in facility, and average working hours. Continuous variables were presented according to the median and interquartile range as data was not normally distributed.

Multiple linear regression was used to examine any factors associated with burnout outcomes. A univariate analysis was conducted to examine statistically significant associations using the crude estimate of 0.25. A multiple linear regression model was built to account for confounding, using step-wise variable selection. A significance of 5% was used for statistical significance testing.

2.7 Ethical considerations

Ethical clearance was obtained from the University of the Witwatersrand's Human Research Ethics Committee (HREC) with ethical application reference number M2111131, as well as from the Mpumalanga Provincial Health Research Committee (PHRC) with reference number MP_202201_003. Letters of support were received from the CEOs of Tonga and Shongwe hospitals and the District

Manager of Ehlanzeni to conduct research in the area. The field worker was given written, signed permission by the principal investigator to recruit participants on her behalf.

Licence to use the MBI-HSS was obtained from Mind Garden. The Remote Online Licence allowed for administration of the MBI-HSS on REDCap. This license type allowed for the MBI-HSS to be used as a data collection method for research purposes.

Access to the full dataset was limited to the researcher and her supervisors. All questionnaires were anonymous and labelled according to participant numbers.

Consent was obtained from all participants prior to their enrolment in the study by virtue of the voluntary nature of completing the questionnaire. A mental health resource sheet that included information on available mental health helplines was provided to HCP who accessed the electronic questionnaire, regardless of the level of completion of the questionnaire.

Chapter Three: Results

Chapter Three discusses the findings of this study. The data is presented and discussed according to each objective. Individual and workplace factors of HCP employed by the DOH within the Nkomazi Local Municipality are described according to descriptive analysis. The experience of burnout according to scores on Emotional Exhaustion, Depersonalisation and Personal Accomplishment among HCP in Nkomazi Local Municipality is described according to descriptive analysis. Lastly, the association between burnout with individual and workplace factors among HCP employed by the DOH within the Nkomazi Local Municipality is examined and variables seen to be significantly associated with burnout are explored.

3.1 Individual factors

The participants comprised 302 HCPs, of which 235 were nursing professionals, 5 were medical professionals, and 54 were allied health professionals, proportionally accounting for 24% of the nursing professional population, 14% of medical professionals and 50% of allied health professionals.. Mostparticipants were nurses (n=235; 77.81%) (Table 1). The average age of participants was 38 years old, with the majority of participants female (n=252; 83.44%) and having tertiary-level education (n= 296; 98.01%). Most of the participants lived locally (n=215; 71.19%); those who had moved to the area had done so on average 2 years prior to the study. Half of the participants were in a long-term, stable relationship (n=157; 51.99%) and two thirds of participants had children (n=191; 63.25%). Over three quarters of the participants (n=236; 78.15%) reported to follow a religion.

The majority of participants (71.19%; n=215) indicated that it was extremely unlikely that they would not seek help from anyone. Mental health professionals were the most sought-after source of assistance, followed closely by parents, intimate partners and friends (Table 3.3). Traditional healers were the least sought-after source of assistance (Table 3.3). Summed scores of the General Help Seeking Questionnaire indicated a median score of 43 (IQR: 11) from a maximum score of 77. Higher scores on the GHSQ indicate greater help seeking intentions.

Table 3.3: Descriptive analysis results for the GHSQ per domain (N=302)

GHSQ Domain	Descriptive analysis results			
	Median	IQR	Mean	Std. Dev.
Intimate partner	5	3	4.52	2.09
Friend	5	2	4.12	1.61
Parent	5	4	4.53	2.17
Other relative/family member	4	2	3.69	1.66
Mental health professional	5	3	4.95	1.83
Phone helpline	3	3	3.52	2.00
Doctor/GP	4	2	3.80	1.85
Minister or religious leader	4	3	3.76	1.87
Traditional healer or community leader	1	1	1.78	1.30
Not interested to seek help	1	1	2.04	1.95
Would seek help elsewhere	1	3	2.55	2.32

Note: Lower bound = 1; Upper bound = 7

3.2 Workplace factors

The participants were fairly evenly spread between those who worked at District Hospital level (n=89; 29.47%), PHC-level (n=120; 39.74%), and CHC-level (n=91; 30.13%). The majority of participants held permanent positions (n=250; 82.78%), did not engage in shift work (n=261; 82.33%), had a median number of years of experience of 8 years, with 6 years of experience in their current work facility.

The HSE Indicator Tool was used to identify variables associated with work-related stress. Higher scores reflect better working conditions. The questions in the questionnaire for Demands and Relationships are negatively phrased, but to help comparison across the other factors in this table, the scores were reversed so that a higher value in the table indicates less risk of stress at work, as is the case in the other factors.

The mean score for the Demands subscale was 2.99 (SD: 0.70), Control was 3.32 (SD: 0.64), Managerial Support was 3.81 (SD: 3.81), Peer Support was 3.81 (SD: 0.59), Relationships was 3.81 (SD: 0.73), Role was 4.27 (SD: 0.54) and Change was 3.52 (SD: 0.77) (Table 3.4).

Table 3.4: Descriptive statistics and percentiles for the HSE Management Standards Indicator Tool (N=302)

	Demands*	Control	Managerial Support	Peer Support	Relation-ships*	Role	Change
Mean	2.99	3.32	3.81	3.81	3.81	4.27	3.52
Std. Dev.	0.70	0.64	0.68	0.59	0.73	0.54	0.77
Percentiles							
25%	2.50	3.00	3.40	3.50	3.25	4.00	3.00
50%	2.88	3.33	3.70	3.75	4.00	4.20	3.33
75%	3.63	3.67	4.20	4.00	4.25	4.80	4.00

*Scores reversed so that a higher value in the table indicates less risk of stress at work, as is the case in the other factors.

Means of the scores for each standard are illustrated with the normative data in Figure 3.2 (19). Scores that were lower than the norm indicate increased work-related stress in the sample. This was apparent in the Demands and Control standards, with the mean of Demands (2.99) lower than the mean of the norm (3.05) and the mean of Control (3.32) lower than the mean of the norm (3.43). The means of the Management Support, Role and Change standards were higher than the means of the norms for the same standards, indicating better working conditions than the norm.

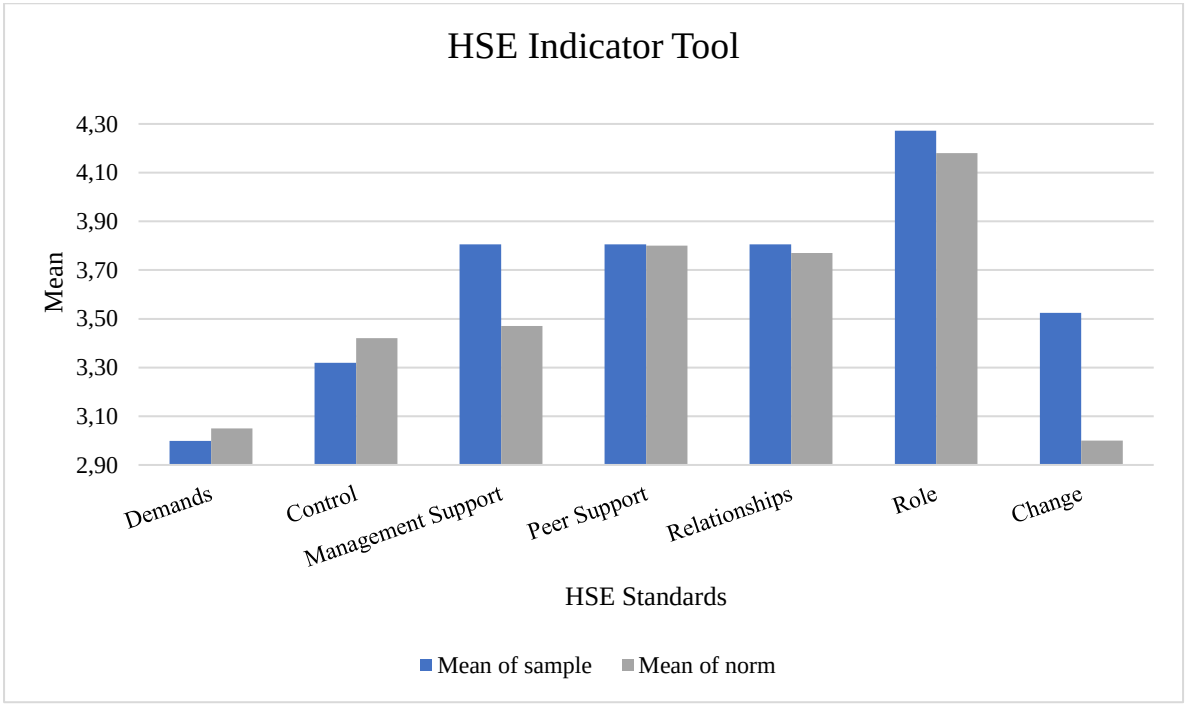


Figure 3.2: Means of the scores for each standard of the seven-factor HSE Management Standards Indicator Tool and the normative values

Results of further individual and workplace factors of HCP employed by the DOH within the Nkomazi Local Municipality in 2022 are presented in Table 3.5.

Table 3.5: Descriptive analysis of individual and workplace factors (N=302)

Individual factors	Frequency	%	Median	Min	Max
Age			38.5	23	61
Gender					
Male	50	16.56			
Female	252	83.44			
Ethnicity					
Black	294	97.35			
White	6	1.99			
Coloured	1	0.33			
unknown	1	0.33			
South African citizen					
Yes	295	97.68			
No	7	2.32			
Moved to where working currently					
No	215	71.19			
Yes	87	28.81			
How long ago did you move			2 years	10 weeks	16 years
Closest town					
Komatipoort	1	0.33			
Malelane	294	97.35			
incomplete entries	7	2.32			
Level of education					
High school	3	0.99			
Tertiary level	296	98.01			
incomplete entries	3	0.99			
Marital status					
Single	112	37.09			
Married	63	20.86			
Living together	94	31.13			
Separated	9	2.98			
Divorced	7	2.32			
Widowed	17	5.63			
Children					
No	111	36.75			
Yes	191	63.25			
Number of children			2	1	7
1	43	14.24			
2	68	22.52			
3	43	14.24			
4	20	6.62			
5+	12	3.97			
incomplete entries	116	38.41			

Religious					
No	60	19.87			
Yes	236	78.15			
incomplete entries	6	1.99			

Workplace factors	Frequency	%	Median	Min	Max
Professional Category					
Audiology	2	0.66			
Dietetics	6	1.99			
Medical Practitioners and Specialists	5	1.66			
Nursing Professional	235	77.81			
Occupational Therapy	4	1.32			
Pharmacy	6	1.99			
Physiotherapy	5	1.66			
Psychology	2	0.66			
Radiography	1	0.33			
Social Work	26	8.61			
Speech and Language Therapy	2	0.66			
other	6	1.99			
incomplete entries	2	0.66			
Job status					
Permanent	250	82.78			
Contract	49	16.23			
incomplete entries	3	0.99			
Type of facility					
District Hospital	89	29.47			
Primary Healthcare Clinic	120	39.74			
Community Healthcare Centre	91	30.13			
incomplete entries	2	0.66			
Duration of total experience			8 years	3 months	30 years
Duration of experience in current facility			6 years	2 weeks	23 years
Number of hours worked			8.5	7	12
Shift work					
No	261	82.33			
Yes	40	12.62			
Night shift					
No	37	12.25			
Yes	3	0.99			
incomplete entries	262	86.75			

3.3 Experience of burnout (measured by MBI-HSS)

The results of the MBI had a skewed distribution for Depersonalisation, Emotional Exhaustion, and Personal Accomplishment subscales, therefore, the median was used to describe the data (Figure 3.3). The median score for the summed Emotional Exhaustion subscale was 26 (IQR: 18), with a minimum score of 1, and maximum score of 44; for Depersonalisation, the median was 7 (IQR: 9), with a minimum score of 0, and maximum score of 20; and for Personal Accomplishment, the median was 29 (IQR: 9) with a minimum score of 7, and maximum score of 48. Normative data for medical professionals indicates that scores for Emotional Exhaustion in this population are higher than the norm of 22.19, Depersonalisation scores were similar to the norm of 7.12, and Personal Accomplishment was lower than the norm of 36.53. This indicates a greater experience of Emotional Exhaustion and decreased Personal Accomplishment in this sample as compared to normative data.

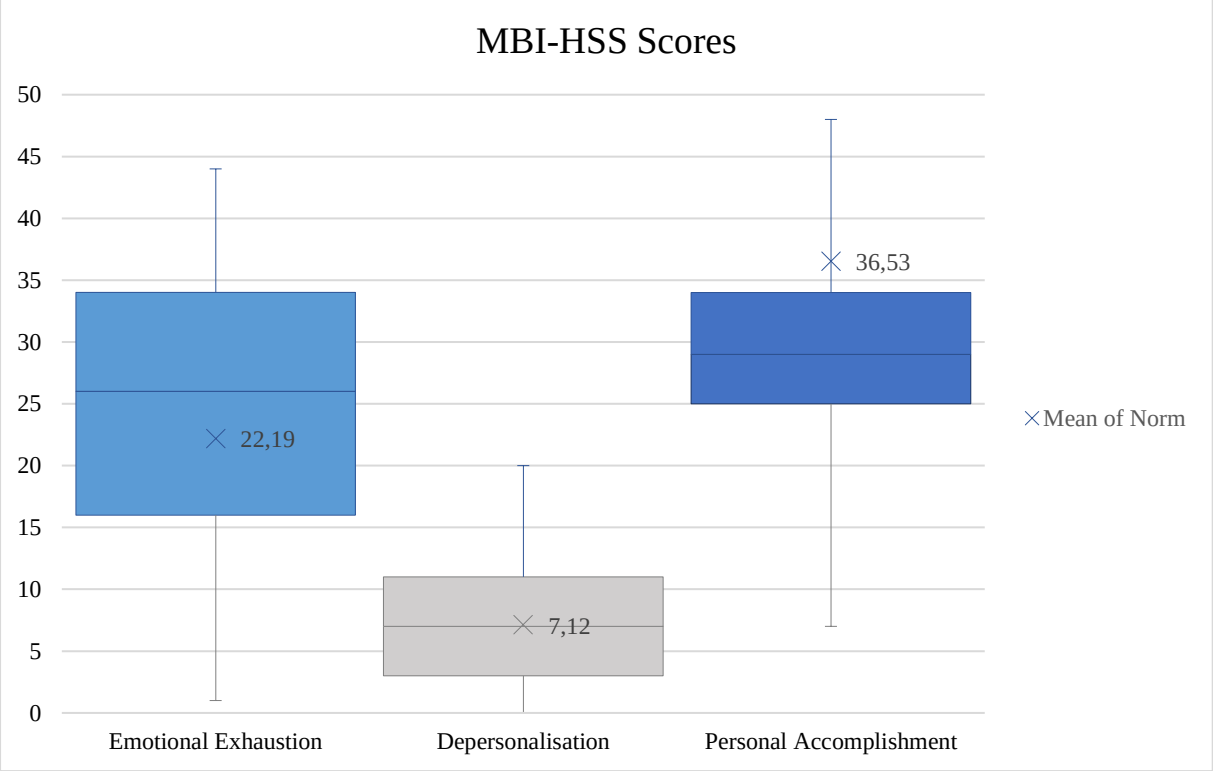


Figure 3.3: Results of the MBI (N=302)

3.4 Association of burnout with individual and workplace factors

The association between burnout with individual and workplace factors among HCP employed by the DOH within the Nkomazi Local Municipality in 2022 was examined. Univariate and multivariate regression results for individual and workplace factors associated with Emotional Exhaustion, Depersonalisation and Personal Accomplishment are presented in Table 3.6 below. Variables which

had a statistically significant association to the burnout scales of Emotional Exhaustion, Depersonalisation and Personal Accomplishment are reported on in the text.

Emotional Exhaustion

In the univariate linear regression, a number of variables were found to be significantly associated with Emotional Exhaustion. In terms of individual factors, being a South African citizen, following a religion and marital status were significantly associated with Emotional Exhaustion. The Emotional Exhaustion score decreased by 9.93 (95%CI: -18.57, -1.28) for participants who were a South African citizen as compared to those who were not; by 8.71 (95%CI: -11.87, -5.55) for those following a religion; and by 5.15 (95%CI: -8.53, -1.77) for participants who were married compared to those who were single. Compared to participants who were single, the Emotional Exhaustion score increased by 4.72 (95%CI:1.71, 7.72) for participants living with a partner; by 10.97 (95%CI:2.61, 19.33) for participants who were divorced; and by 6.45 (95%CI:0.86, 12.03) for participants who were widowed.

In terms of workplace factors, variables that were significantly associated with Emotional Exhaustion were the type of facility worked in, working shift work, and working conditions with relation to demands, control, managerial support, peer support, relationships, role, and change. When compared to participants working at a PHC clinic, the Emotional Exhaustion score was increased by 14.69 (95%CI:12.21, 17.15) for those participants working at a district hospital and by 15.32 (95%CI:12.86, 17.77) for participants working at a CHC. The Emotional Exhaustion score increased by 8.1 (95%CI: 4.33, 11.87) for those engaging in shift work as compared to those who did not. The Emotional Exhaustion score decreased by 1.23 (95%CI: -1.41, -1.03) with an improvement in working conditions with relation to demands; by 1.68 (95%CI: -2.01, -1.34) with improved managerial support; by 1.49 (95%CI: -2.02, -0.95) with improved peer support; by 1.9 (95%CI: -2.29, -1.5) with improved relationships; by 1.34 (95% CI: -1.79, -0.87) with improved role clarity; and by 2.63 (95%CI: -3.11, -2.13) with improved involvement in making changes. The Emotional Exhaustion score increased by 1.29 (95%CI: 0.98, 1.6) with an improvement in working conditions with relation to control.

However, in the multiple linear regression**,** no specific variables were found to be significantly associated with Emotional Exhaustion.

Depersonalisation

In the univariate linear regression, a number of variables were found to be significantly associated with Depersonalisation. In terms of individual factors, having moved to where one was currently working, following a religion, having children and being married were significantly associated with Depersonalisation. The Depersonalisation score decreased by -1.53 (95%CI: -2.92, -0.13) for participants who had moved to where they were currently working as compared to those who were local; by -2.63 (95% CI: -4.22, -1.05) for participants who followed a religion; by -1.64 (95%CI: -2.95, -0.33) for participants who had children; and by -3.57 (95%CI: -5.22, -1.92) for participants who were married as compared to participants who were single.

In terms of workplace factors, variables that were significantly associated with Depersonalisation were the type of facility worked in, having permanent employment, total years of experience, years of employment in current facility, and working conditions with relation to demands, control, managerial support, peer support, relationships, role, and change. When comparing to participants who were working at a PHC, the Depersonalisation score was increased by 4.85 (95%CI: 3.46, 6.24) for participants working at a district hospital and by 5.4 (95%CI: 4.01, 6.78) for participants working at a CHC. The Depersonalisation score increased by 1.86 (95%CI: 0.15, 3.57) for participants who were permanently employed as compared to those with contract employment; by 0.13 (95%CI: 0.01, 0.24) for every year increase in total years of experience; and by 0.15 (95%CI: 0.04, 0.27) for every year increase in years of employment in current facility. The Depersonalisation score decreased by -0.49 (95%CI: -0.59, -0.39) with an improvement in working conditions with relation to demands; by -0.81 (95%CI: -0.97, -0.65) with improved managerial support; by -1.02 (95%CI: -1.26, -0.77) with improved peer support; by -1.18 (95%CI: -1.36, -1.01) with improved relationships; by -0.78 (95%CI: -1.00, -0.56) with improved role clarity; and by -1.12 (95%CI: -1.36, -0.87) with improved involvement in

making changes. The Depersonalisation score increased by 0.44 (95%CI: 0.28, 0.59) with an improvement in working conditions with relation to control.

In the multiple linear regression, a barely significant association between demands at work, including issues involving workload, work patterns and the working environment, and Depersonalisation was found. For every point score increase towards improved demands, Depersonalisation decreased by -0.55 (95%CI: -1.10 to -0.01).

Personal Accomplishment

In the univariate linear regression, a number of variables were found to be significantly associated with Personal Accomplishment. In terms of individual factors, of note was that age, being a South African citizen, and one's marital status was significantly associated with Personal Accomplishment. The Personal Accomplishment score was decreased by -0.33 (95%CI: -0.45, -0.22) for every year increase in age; by -7.35 (95%CI: -14.22, -0.47) for participants who were a South African citizen as compared to those who were not; by -3.98 (95%CI: -6.8, -1.17) for participants who were married as to those who were single; and by -3.76 (95%CI: -6.26, -1.26) for participants who were living together with their partner as compared to those who were single.

In terms of workplace factors, variables that were significantly associated with Personal Accomplishment were the type of facility worked in, having permanent employment, total years of experience, and working conditions with relation to demands, control, managerial support, relationships, role, and change. The Personal Accomplishment score was decreased by -3.54 (95%CI: -6.02, -1.05) for participants working at a CHC as compared to working at a PHC; by -3.6 (95%CI: -6.41, -0.79) for participants who were permanently employed compared to those with contract employment; and by -0.26 (95%CI: -0.45, -0.07) for every year increase in total years of experience. The Personal Accomplishment score decreased by -0.33 (95%CI: -0.51, -0.15) with an improvement in working conditions with relation to demands, and by -0.77 (95%CI: -1.03, -0.51) with an improvement in working conditions with relation to control. The Personal Accomplishment score increased by 0.70 (95%CI: 0.41, 1.00) with improved managerial support; by 1.03 (95%CI: 0.69, 1.37) with improved

relationships; by 1.56 (95%CI: 1.22, 1.9) with improved role clarity; and by 1.78 (95%CI: 1.37, 2.18) with improved involvement in making changes.

In the multiple linear regression, age was found to be barely associated with Personal Accomplishment, with the Personal Accomplishment score decreasing by -0.66 (95%CI: -1.00 to -0.33) for every year increase in age. Being divorced was also associated with Personal Accomplishment. The Personal Accomplishment score significantly increased by 14.31 (95%CI: 5.99-22.62) for participants who were divorced compared to those who were single. However, this association was not precise as the confidence interval was wide.

Working at a CHC and working night shifts were associated with Personal Accomplishment. The Personal Accomplishment score significantly increased by 5.48 (95%CI: 0.38-10.57) for participants who worked at a CHC compared to those working at a district hospital and significantly increased by 13.70 (95%CI: 3.96-23.44) for participants who worked night shifts compared to those who did not. However, again, both of these associations were not precise as the confidence interval was wide. Contract employment was significantly associated with Personal Accomplishment. The Personal Accomplishment score decreased by -3.20 (95%CI: -6.03 to -0.37) for those having contract employment as compared to permanent employment.

Demands at work, including issues involving workload, work patterns and the working environment, was significantly associated with Personal Accomplishment. Improved conditions at work with regards to demands was significantly associated with the Personal Accomplishment score increasing by 0.49 (95%CI: 0.10-0.89) for every point score increase towards improved demands. Managerial support, including support provided by the organisation and line management, was significantly associated with Personal Accomplishment with the Personal Accomplishment score increasing by 0.84 (95%CI: 0.01-1.67) for every point score increase towards improved management support. Role, including whether employees understand their role within the organisation and whether the organisation ensures that the employee does not have conflicting roles, was significantly associated with Personal Accomplishment, with Personal Accomplishment scores increasing by 1.19 (95%CI: 0.48-1.90) for every point score increase towards having improved role.

Table 3.6: Univariate and multivariate regression results for individual and workplace factors associated with MBI scales (N=302)

	Emotional Exhaustion				Depersonalisation				Personal Accomplishment			
	Univariate analysis		Multivariate analysis		Univariate analysis		Multivariate analysis		Univariate analysis		Multivariate analysis	
Individual factors	Coef. (95% CI)	*p* value	Coef. (95% CI)	*p* value	Coef. (95% CI)	*p* value	Coef. (95% CI)	*p* value	Coef. (95% CI)	*p* value	Coef. (95% CI)	*p* value
Age	0.06 (-0.08, 0.21)	0.40			-0.01 (-0.07, 0.06)	0.86			-0.33 (-0.45, -0.22)	**0.00**	-0.66 (-0.99, -0.32)	**0.00**
Gender												
Male	-1.32 (-4.84, 2.20)	0.46			-1.05 (-2.76, 0.65)	0.23	-3.01 (-8.87, 2.84)	0.28	1.12 (-1.67, 3.93)	0.43		
Female	(base)											
Ethnicity												
Black	-6.56 (-15.90, 2.79)	0.17			-0.65 (-5.24, 3.92)	0.78			-4.44 (-11.91, 3.03)	0.24		
White	(base)										0.74 (-11.34, 12.84)	0.90
Coloured	-14.83 (-39.32, 9.66)	0.23	-61.1 (-697.48, 575.27)	0.44	-1.33 (-13.34, 10.67)	0.83			-4.16 (-23.75, 15.41)	0.68		
I prefer not to say	13.17 (-11.32, 37.66)	0.29			2.66 (-9.34, 14.67)	0.66			-3.16 (-22.75, 16.41)	0.75		
SA citizen												
Yes	-9.93 (-18.57, -1.28)	**0.03**			-1.77 (-6.00, 2.46)	0.41			-7.35 (-14.22, -0.47)	**0.04**	-0.76 (-3.46, 1.93)	0.56
No	(base)											
Moved to where working currently												
No	(base)											
Yes	1.88 (-1.01, 4.76)	0.20	8.84 (-121.24, 138.92)	0.55	-1.53 (-2.92, -0.13)	**0.03**	0.24 (-6.59, 7.07)	0.94	-0.71 (-3.01, 1.58)	0.54		
Highest level of education												
High school	(base)											
Tertiary	7.8 (-5.43, 21.04)	0.25			1.03 (-5.42, 7.50)	0.75			-1.19 (-11.70, 9.31)	0.82		
Marital status												
Single	(base)											
Married	-5.15 (-8.53, -1.77)	**0.00**	-3.74 (-114.12, 106.63)	0.74	-3.57 (-5.22, -1.92)	**0.00**	3.27 (-3.24, 9.79)	0.29	-3.98 (-6.80, -1.17)	**0.01**	0.66 (-3.22, 4.56)	0.72
Living together	4.72 (1.71, 7.72)	**0.00**	14.36 (-114.29, 143.03)	0.39	1.81 (0.34, 3.27)	**0.02**	0.30 (-4.00, 4.61)	0.88	-3.76 (-6.26, -1.26)	**0.00**	0.12 (-2.67, 2.92)	0.93
Separated	4.02 (-3.41, 11.45)	0.29	3.00 (-132.58, 138.60)	0.83	-0.63 (-4.26, 2.99)	0.73	2.06 (-3.32, 7.44)	0.41	-1.52 (-7.71, 4.66)	0.63	-2.17 (-6.78, 2.44)	0.34
Divorced	10.97 (2.61, 19.33)	**0.01**	48.19 (-221.86, 318.25)	0.26	2.28 (-1.79, 6.36)	0.27	4.98 (-5.1, 15.07)	0.29	-3.93 (-10.9, 3.02)	0.27	14.3 (5.98, 22.62)	**0.00**
Widowed	6.45 (0.86, 12.03)	**0.02**	28.45 (-762.93, 819.84)	0.73	-0.21 (-2.93, 2.51)	0.88	0.94 (-8.48, 10.38)	0.83	-2.19 (-6.85, 2.45)	0.35	1.05 (-4.39, 6.50)	0.69
Children												
No	(base)											
Yes	-2.13 (-4.84, 0.57)	0.12			-1.64 (-2.95, -0.33)	**0.01**	0.28 (-4.48, 5.04)	0.90	-1.41 (-3.56, 0.74)	0.20	-1.7 (-4.81, 1.41)	0.27
Number of children	0.94 (-0.34, 2.22)	0.15	2.75 (-70.67, 76.17)	0.72	0.16 (-0.5, 0.82)	0.63			-0.21 (-1.27, 0.84)	0.69		
Religious												
No	(base)											
Yes	-8.71 (-11.87, -5.55)	**0.00**	3.33 (-123.22, 116.55)	0.78	-2.63 (-4.22, -1.05)	**0.00**	0.61 (-3.43, 4.66)	0.74	2.09 (-0.51, 4.70)	0.12	-1.94 (-4.50, 0.61)	0.13
Help Seeking Intentions												
GHSQ=0-30	3.21 (-1.66, 8.07)	0.20			1.16 (-1.32, 3.65)	0.36			0.32 (-3.92, 4.58)	0.88		
GHSQ=31-50	11.32 (8.39, 14.23)	**0.00**			3.96 (2.46, 5.45)	**0.00**	4.91 (-4.9, 14.73)	0.29	0.91 (-1.64, 3.47)	0.48		
GHSQ=51-70	(base)											

	Emotional Exhaustion				Depersonalisation				Personal Accomplishment			
	Univariate analysis		**Multivariate analysis**		**Univariate analysis**		**Multivariate analysis**		**Univariate analysis**		**Multivariate analysis**	
Workplace factors	Coef. (95% CI)	*p* value	Coef. (95% CI)	*p* value	Coef. (95% CI)	*p* value	Coef. (95% CI)	*p* value	Coef. (95% CI)	*p* value	Coef. (95% CI)	*p* value
Type of facility												
District Hospital	14.69 (12.21, 17.15)	**0.00**			4.85 (3.46, 6.24)	**0.00**			-2.01 (-4.51, 0.48)	0.11		
PHC	(base)											
CHC	15.32 (12.86, 17.77)	**0.00**	1.44 (-137.85, 140.75)	0.92	5.40 (4.01, 6.78)	**0.00**	3.96 (-3.59, 11.53)	0.27	-3.54 (-6.02, -1.05)	**0.01**	5.47 (0.38, 10.56)	**0.04**
Professional Category												
Audiology	10.28 (-5.78, 26.33)	0.21			-0.76 (-8.62, 7.09)	0.85			7.36 (-5.54, 20.27)	0.26		
Dietetics	6.78 (-2.57, 16.12)	0.16			1.73 (-2.83, 6.31)	0.46			-0.13 (-7.64, 7.38)	0.97		
Medical Practitioners and Specialists	10.08 (-0.14, 20.29)	**0.05**			3.53 (-1.46, 8.53)	0.17			-0.13 (-8.34, 8.08)	0.98		
Nursing Professional	(base)											
Occupational Therapy	1.78 (-9.62, 13.18)	0.76			1.48 (-4.09, 7.06)	0.60			-3.38 (-12.54, 5.78)	0.47		
Pharmacy	1.28 (-8.07, 10.62)	0.79			-0.76 (-5.33, 3.81)	0.74	0.41 (-15.3, 16.14)	0.95	-0.96 (-8.48, 6.55)	0.80		
Physiotherapy	-4.72 (-14.94, 5.49)	0.36			-0.26 (-5.26, 4.73)	0.92			-3.93 (-12.14, 4.28)	0.35		
Psychology	2.28 (-13.78, 18.33)	0.78			4.23 (-3.62, 12.09)	0.29			-3.13 (-16.04, 9.77)	0.63		
Radiography	0.28 (-22.38, 22.94)	0.98			-0.26 (-11.35, 10.82)	0.96			-7.13 (-25.35, 11.08)	0.44		
Social Work	1.51 (-3.16, 6.18)	0.53			2.27 (-0.01, 4.56)	**0.05**			-1.86 (-5.62, 1.89)	0.33		
Speech and Language Therapy	4.28 (-11.78, 20.33)	0.60			1.23 (-6.62, 9.09)	0.76			-3.63 (-16.54, 9.27)	0.58		
other	9.94 (0.59, 19.29)	**0.04**			5.90 (1.32, 10.47)	**0.01**			-3.96 (-11.48, 3.55)	0.30		
Shift work												
No	(base)											
Yes	8.10 (4.33, 11.87)	**0.00**			1.07 (-0.80, 2.95)	0.26			2.17 (-0.87, 5.23)	0.16		
Night shift												
No	(base)											
Yes	7.78 (-4.31, 19.86)	0.20			4.70 (-1.19, 10.60)	**0.12**	-5.94 (-20.75, 8.86)	0.39	6.86 (-2.00, 15.73)	0.13	13.69 (3.95, 23.44)	**0.01**
Job status												
Permanent	1.45 (-2.11, 5.00)	0.43			1.86 (0.15, 3.57)	**0.03**	0.34 (-4.63, 5.31)	0.88	-3.6 (-6.41, -0.79)	**0.01**		
Contract	(base)										-3.2 (-6.02, -0.37)	**0.03**
Total years of experience	0.27 (0.02, 0.50)	**0.03**	-1.4 (-25.20, 22.38)	0.59	0.13 (0.01, 0.24)	**0.02**	-0.56 (-2.27, 1.13)	0.47	-0.26 (-0.45, -0.07)	**0.01**	0.36 (-0.10, 0.83)	0.12
Years experience in current facility	0.14 (-0.10, 0.37)	0.26			0.15 (0.04, 0.27)	**0.01**	0.47 (-1.18, 2.12)	0.54	-0.07 (-0.26, 0.11)	0.43		
Number hours worked												
7	-12.20 (-32.45, 8.05)	0.24			-5.10 (-15.75, 5.55)	0.35			-7.4 (-24.83, 10.03)	0.40		
8	-10.83 (-30.21, 8.56)	0.27	-29.68 (-282.51, 223.15)	0.38	-7.08 (-17.28, 3.11)	0.17	-7.81 (-17.62, 1.99)	0.11	-7.24 (-23.93, 9.44)	0.39		
8.5	-21.87 (-41.42, -2.31)	**0.03**			-12.66 (-22.95, -2.37)	**0.02**	-9.13 (-26.13, 7.86)	0.26	4.51 (-12.32, 21.35)	0.60		
9	-23.93 (-43.32, -4.54)	**0.02**	-44.09 (-296, 207.81)	0.27	-10.97 (-21.17, -0.76)	**0.04**	-9.04 (-19.79, 1.71)	0.09	-6.11 (-22.8, 10.58)	0.47		
12	(base)						-1.68 (-18.24, 14.86)	0.82				
HSE Demands	-1.23 (-1.41, -1.03)	**0.00**	0.38 (-55.13, 55.91)	0.94	-0.49 (-0.59, -0.39)	**0.00**	-0.55 (-1.09, -0.01)	**0.05**	-0.33 (-0.51, -0.15)	**0.00**	0.49 (0.09, 0.89)	**0.02**
HSE Control	1.29 (0.98, 1.60)	**0.00**	-0.47 (-20.06, 19.12)	0.81	0.44 (0.28, 0.59)	**0.00**	0.17 (-0.30, 0.65)	0.44	-0.77 (-1.03, -0.51)	**0.00**	0.06 (-0.33, 0.45)	0.74
HSE Management Support	-1.68 (-2.01, -1.34)	**0.00**	-4.01 (-74.37, 66.34)	0.60	-0.81 (-0.97, -0.65)	**0.00**	0.41 (-0.75, 1.58)	0.44	0.70 (0.41, 1.00)	**0.00**	0.83 (0.01, 1.66)	**0.05**
HSE Peer Support	-1.49 (-2.02, -0.95)	**0.00**	-1.78 (-56.18, 52.60)	0.75	-1.02 (-1.26, -0.77)	**0.00**	-0.71 (-2.08, 0.65)	0.27	0.00 (-0.44, 0.43)	0.99		
HSE Relationships	-1.90 (-2.29, -1.50)	**0.00**	-4.62 (-114.79, 105.55)	0.69	-1.18 (-1.36, -1.01)	**0.00**	-0.96 (-1.98, 0.06)	0.06	1.03 (0.69, 1.37)	**0.00**	0.56 (-0.05, 1.18)	0.07
HSE Role	-1.34 (-1.79, -0.87)	**0.00**	8.14 (-75.33, 91.62)	0.43	-0.78 (-1.00, -0.56)	**0.00**	0.67 (-0.58, 1.93)	0.26	1.56 (1.22, 1.9)	**0.00**	1.19 (0.48, 1.9)	**0.00**
HSE Change	-2.63 (-3.11, -2.13)	**0.00**	0.30 (-48.3, 48.92)	0.95	-1.12 (-1.36, -0.87)	**0.00**	-0.47 (-2.08, 1.12)	0.52	1.78 (1.37, 2.18)	**0.00**	-0.73 (-2.01, 0.54)	0.24
		_cons	61.82 (-775.94, 899.58)	0.52		_cons	30.82 (3.52, 58.11)	0.03		_cons	1.65 (-19.18, 22.48)	0.87

Chapter Four: Discussion

This research evaluated the severity of burnout and associated individual and workplace factors among HCPs employed by the DOH within the Nkomazi Local Municipality, Mpumalanga, during 2022. The study sample comprised 302 participants, aged between 23 and 61 years, mostly female and nurses. High levels of burnout were observed for Emotional Exhaustion and Personal Accomplishment but not for Depersonalisation. Most participants would seek help if they had an emotional problem, most likely from mental health professionals and least likely from traditional healers. On multivariate regression analysis, no individual demographic or workplace factors were significantly associated with Emotional Exhaustion or Depersonalisation. However, Personal Accomplishment increased with an improvement in work demands, managerial support and role understanding.

4.1 Participants

The description of the individual factors indicated that HCP employed by the DOH within the Nkomazi Local Municipality in 2022 were a stable population, being predominantly culturally and ethnically homogenous. Although most participants were nursing professionals, allied health professionals and medical practitioners were adequately represented when comparing the study sample to the HCP human resource data from the DOH in Nkomazi Local Municipality. This correlates to the study setting as the research was conducted within the rural, primary healthcare setting, where services are predominantly nurse-driven (22).

The majority of the population were local to the area or moved an average of 2 years prior, with a significant duration of employment, indicating experience. Years of experience working within the sector was found to be associated with higher wellbeing, and may account for the findings of less Emotional Exhaustion than anticipated (5).

4.2 Severity of burnout

The MBI-HSS scores revealed higher than normative experiences of Emotional Exhaustion and Personal Accomplishment but not for Depersonalisation among study participants. It is difficult to quantitatively compare the data of the MBI-HSS scores to prior studies due to the variation in how

burnout is defined, assessed and reported (5). A systematic review conducted by Owuor et al. (2020) examined burnout in nursing professionals in twelve studies across seven African countries (n=2 543), with six of the studies conducted in South Africa (23). It was found that high levels of burnout were recorded among nurses across all dimensions, with the prevalence of Emotional Exhaustion being 66%, Depersonalisation 60% and low Personal Accomplishment 49% (23). However, a systematic review of 65 articles in sub-Saharan Africa, 27 of those based in South Africa, by Dubale et al. (2019), found the prevalence of Emotional Exhaustion ranging between 12.5-65.2%, Depersonalisation 5-57.8% and reduced Personal Accomplishment 25-85.1% (5).

Dubale et al. found that in sub-Saharan Africa, the highest levels of burnout were recorded among nurses and were associated with unfavourable working conditions, increased job demands and low job satisfaction (5). HCP with less support or resources to manage the increased job demands were found to be associated with high levels of burnout (5). These factors and others that emerged from the data that were associated with a higher than normative experience of Emotional Exhaustion and Personal Accomplishment but not for Depersonalisation are explored in subsequent paragraphs.

4.2.1 Factors associated with an increased experience of burnout

Emotional Exhaustion

On univariate analysis, many factors were associated with increased Emotional Exhaustion among HCPs in Nkomazi Municipality, particularly with regards to working conditions including demands, control, managerial support, peer support, relationships, role, and change. However, adjustment for confounding factors on multivariate analysis resulted in many of the working conditions and burnout factors negating each other, with no single variable being significantly associated with Emotional Exhaustion. This does not diminish the importance of challenging working conditions being associated with an increased experience of Emotional Exhaustion, as job characteristics inherently influence emotional stress and thus Emotional Exhaustion (2).

The higher than normative experience of Emotional Exhaustion among the participants of this study is consistent with the previous finding that HCP working rurally care for a disproportionally greater

number of patients due to out-migration of HCP to urban areas, the private sector and from primary to higher levels of care (5,9,22,24). The resulting staff shortages contribute to higher time pressures due to the excessive workloads, which was found by Owuor et al. to increase the experience of Emotional Exhaustion among nurses in Africa (23).

Depersonalisation

Depersonalisation is described by Maslach as "negative, cynical attitudes and feelings about one's patients", leading to a perception of dehumanisation of others (2). Maslach found that the development of Depersonalisation appeared to be related to the experience of Emotional Exhaustion (2). However, the MBI-HSS scores revealed Depersonalisation scores were similar to normative data, thus indicating no increase in Depersonalisation found among study participants.

Dubale et al. found that recurrent night duty and interpersonal conflict among colleagues were predictors of increased Depersonalisation (5). However, only 0.99% (n=3) of participants in the study engaged in night shift and the HSE "Relationships" subscale around the promotion of positive working practices to avoid conflict and dealing with unacceptable behaviour were found to be similar to normative data. Therefore, the lower levels of Depersonalisation reported in this study may be related to very few participants performing night duties and that relationships were found to be similar to HSE norms.

Awareness of Depersonalisation by nursing professionals was found in a qualitative study conducted by Hobbs et al. (2020), who interviewed ten nursing professionals on their lived experiences of practising 'caring presence' in a rural, public hospital in South Africa (25). A shortage of resources, including staff shortages, a lack of time and excessive workloads have been found to result in poor nurse-to-patient ratios in rural areas in South Africa (25). Poor nurse-to-patient ratios increase barriers in allowing nurses to practise a caring presence in the treatment of patients (25). Nurses in the study by Hobbs et al. were found to be aware of the increased risk of Depersonalisation and the resulting dehumanisation of patients when confronted with an emphasis on productivity and high caseloads in

the South African healthcare system, despite strongly expressing against unethical and uncaring nursing actions (25).

Personal Accomplishment

Personal Accomplishment is described by Maslach as "reflecting a dimension of self-evaluation" which includes evaluating the job characteristics that influence the resources available to handle the job successfully (2). As is well documented, rural health systems are under-resourced, including in human resources, leading to increased demands and decreased control at work (9,22,24). This was reflected in the data as seen by the increased work-related stress when comparing to normative data in the HSE Demands and Control standards in the sample. Low levels of Personal Accomplishment may result from frustrations that come from working in an under-resourced rural health system and the relative inability to change these conditions (12). A lack of accomplishment and the occupational stress that this brings may be as a result of a mismatch between the efforts HCP spend and the rewards gained in their occupational environments; efforts represented by the demands placed on HCP and rewards represented by the returns such as financial compensation, career development opportunities, recognition and esteem (26).

4.2.2 Factors associated with a reduced experience of burnout

Emotional Exhaustion

In the univariate analysis, it was found that being a South African citizen, following a religion and marital status were significantly associated with reduced Emotional Exhaustion. A possibility is that the social support found in participation in religion or from stable relationships may reduce the experience of Emotional Exhaustion. According to Dubale et al., adequate social support was found to be a protective factor against burnout among HCP (5). Increased social support in the forms of being married and being local to the area, thereby having an entrenched network of support, emerged as reducing the experience of Emotional Exhaustion (5).

In a study by Young and Pakenham (2020) with 369 participants in 77 countries which examined risk and protective factors pertaining to the mental health of aid workers, religiosity was found to be a

protective factor (11). Bentzen found that humans are more likely to turn to religion for comfort and explanation, particularly when faced with adversity (27). Religion is used to reduce emotional distress arising from, in particular, negative and unpredictable situations (27). It could be argued that the situation HCP face in a rural, South African healthcare system could be described as 'negative and unpredictable', therefore explaining why religiosity reduced the experience of Emotional Exhaustion (12,28).

This sample was found to seek help from a variety of sources, with the preferred source of help being mental health professionals. This indicates strong help seeking skills, with HCP further utilising their support system, which has been found to be a protective factor in promoting wellness and resilience (12). A systematic review by Zaman et al. (2022) examined 16 studies from the UK, USA, Australia, South Africa, Singapore and South Korea on the barriers and facilitators to seeking help for mental health in doctors (29). Facilitators found to increase help-seeking behaviour included positive views about mental health, greater awareness and accessibility to mental health services and supportive supervisors (29).

Ganasen et. al. (2008) found that there was a need for improved dissemination of information on mental health among primary healthcare workers as they are the first medical contact in many rural populations and improved mental health literacy could facilitate early recognition of mental illness and appropriate treatment seeking (10). The health literacy in this population may be high due to being HCP, and therefore being exposed to appropriate sources in seeking help for mental health support in their employment which they can then translate into their personal lives (10).

Due to this sample being homogenous with a significant duration of employment, and management support perceived as being higher than normative data, this could account for less Emotional Exhaustion than anticipated, despite the challenging work conditions. Social support includes the perceived support from management. Management support may be perceived as being greater than the norms as some research has argued that rural areas are shaped by more ethnically and culturally homogeneous populations that tend to be more cohesive, which could include greater cohesion between employees and their managers (30). In the literature, it has been postulated that HCP have heterogenous needs

based on specific challenges, predispositions, gender, race, socio-economic status, and other factors, of which managers and leaders will need to be aware to address the challenges and needs in the workplace (31). However, as the sample was homogenous with a significant duration of employment, it could mean that managers are more aware of the challenges and needs of these HCP.

Depersonalisation

The MBI-HSS scores revealed Depersonalisation scores were similar to normative data, thus indicating a reduced experience of burnout on this subscale. Despite postulating that high work demands and time pressure could increase the experience of Depersonalisation, the embeddedness of HCP within the communities in which they work, combined with a strong support system and high help-seeking intentions, may account for the decreased experience of Depersonalisation in this research (26). As the majority of participants were local to the study site and had connections existing within their local community, it may be that HCP share a close relationship with their patients and treat them as if they were family members (25). These experiences could be regarded as meaningful and enriching moments, thus decreasing the experience of Depersonalisation (25).

Personal Accomplishment

Increased Personal Accomplishment emerged as a variable which was significantly associated to a number of workplace factors, particularly with regards to an improvement in demands, managerial support, and role clarity. HCP employed by the DOH within the Nkomazi Local Municipality had a clear understanding of their role within the organisation. This aligns with the implementation of primary healthcare re-engineering goals where an understanding of HCP's roles in relation to self and others is crucial for a functioning rural healthcare system, especially within the ever-changing 'task shifting' that occurs within the primary healthcare system (9,26).

The necessity of improved managerial support within the rural health system clearly emerged as a mitigating factor to HCP feeling unhappy about themselves and dissatisfied with their accomplishments at work through management support increasing HCP recognition and esteem (2,26). This has been

confirmed as leading many HCP in intending to leave the public sector, as was found with medical doctors practising in rural KwaZulu Natal (12).

Personal Accomplishment, in HCP feeling satisfied, passionate, fulfilled and engaged in the communities within they work, can mitigate the experience of working in demanding work conditions caused by high workloads, staff shortages and poor resources (26). However, despite HCP experiencing gratification from their work, improving the experience of Personal Accomplishment does not replace the need for an improvement in work conditions, and this possibly explains why Personal Accomplishment scores on the MBI-HSS were found to be below normative data (26).

4.3 Limitations

In considering the findings of this study, it is important to bear in mind the following limitations: only 26.5 % of HCP employed within the Nkomazi Local Municipality participated. While this is an adequate sample size for inferential statistics, it is not known whether the sample is representative of the whole group. Volunteer bias was likely to have occurred due to participants self-selecting whether they complete the questionnaire. This limitation may have excluded those HCP with more severe burnout due to fear of stigma, discrimination or lack of support. The self-reporting nature of the questionnaire also could have introduced participant bias. Therefore, the results of this research may not be generalisable to other HCP in South Africa.

The research sites may not have been a representative sample as they were selected due to ease of access to the field worker and available public transportation. The use of a cross-sectional design meant that causal inferences could not be made between individual and workplace factors with burnout. This made the interpretation of complex relationships between variables difficult. Technical limitations included the choice of the MBI as an instrument to measure burnout, as prior studies have not validated the MBI in healthcare workers in sub-Saharan Africa, and there may have been different cultural interpretations of questions related to the construct of burnout (3).

Chapter Five: Conclusions and Recommendations

This research described the severity of burnout and examined associated individual and workplace factors among HCP employed by the DOH within the Nkomazi Local Municipality, Mpumalanga, in 2022. HCP were found to experience high levels of burnout for Emotional Exhaustion and Personal Accomplishment but not for Depersonalisation. Most participants would seek help if they had an emotional problem, most likely from mental health professionals, and least likely from traditional healers. On multivariate regression analysis, no individual demographic or workplace factor was significantly associated with Emotional Exhaustion or Depersonalisation. However, Personal Accomplishment increased with an improvement in work demands, improved managerial support and having an improvement in role understanding.

It is recommended that further research be conducted on burnout in a rural, district-level setting in the form of a qualitative study to better understand the nuances of the work environment. Performing longitudinal assessments of burnout along with measurements of mood, substance use, suicidality, cognition, performance and quality of life will add to the understanding of the burnout syndrome and its long-term consequences in a South African, rural, district-level setting.

It is further recommended that both evidence-based organisational and individual-focused solutions be explored and implemented to prevent burnout, with special consideration being given to improving work demands, managerial support and role clarity in rural, district-level settings as part of the effort to retain rural HCP in the public health system.

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Appendices

Appendix 1: Plagiarism Declaration Report

PLAGIARISM DECLARATION TO BE SIGNED BY ALL HIGHER DEGREE STUDENTS

SENATE PLAGIARISM POLICY: APPENDIX ONE

I Alexandra Claire Moses (Student number: 1934479) am a student registered for the degree of Masters in Public Health in the academic year 2023.

I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
- I have followed the required conventions in referencing the thoughts and ideas of others.
- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.
- I have included as an appendix a report from "Turnitin" (or other approved plagiarism detection) software indicating the level of plagiarism in my research document.

Signature: CMoses Date: 09 June 2023

Appendix 2: Turnitin report

A.Dunnell Thesis Final.docx

LJ Robertson
30/01/2023

AR Dreyer
30/01/23

ORIGINALITY REPORT

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Appendix 3: Ethics Certificates

University of Witwatersrand Human Research Ethics Committee (Medical) Clearance Certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG	HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

Office of the Deputy Vice-Chancellor (Research and Innovation)

TO: Ms AC Dunnell
School of Public Health
Medical School
University

E-mail: alex.dunnell@gmail.com

CC: Supervisor: Professor L Robertson and Ms A Dreyer
<Lesley.Robertson@wits.ac.za>
and <HREC-Medical Research Office@wits.ac.za>

FROM: Mr Iain Burns
Human Research Ethics Committee (Medical)
Tel: 011 717 1252

E-mail: Iain.Burns@wits.ac.za

DATE: 2022/03/24

REF: R14/49

PROTOCOL NO: **M2111131** (This is your ethics application reference number. Please quote it in all enquiries, oral or written, relating to this study.)

PROJECT TITLE: *Factors associated with burnout among healthcare workers in a rural context, South Africa: a cross-sectional study*

Please find attached the Clearance Certificate for the above project. I hope it goes well and that an article in a recognized publication comes out of it. This will reflect well on your professional standing and contribute to Government funding of the University.



MSWorks2000/Iain0007/Clearscan.wps

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

R49 Ms AC Dunnell

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M2111131

NAME: **(Principal Investigator)**	Ms AC Dunnell
DEPARTMENT:	School of Public Health Medical School University
PROJECT TITLE:	*Factors associated with burnout among healthcare workers in a rural context, South Africa: a cross-sectional study*
DATE CONSIDERED:	2021/11/26
DECISION:	Approved unconditionally
CONDITIONS:	
NOTE:	If contact information regarding student study participants is required, please contact the Registrar's office - <Nicoleen.Potgieter@wits.ac.za>
SUPERVISOR:	Professor L Robertson and Ms A Dreyer
APPROVED BY:	Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	2022/03/24

This Clearance Certificate is valid for 5 years from the date of approval. An extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office secretariat on the 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

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 submit details to the Committee. **I agree to submit a yearly progress report**. When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in **November** and therefore reports and re-certification will be due in the month of **November** each year. Unreported changes to the study may invalidate the clearance given by the HREC (Medical).

Signature of Principal Investigator

2022/03/28
Date

Mpumalanga Provincial Department of Health Research Committee

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REPUBLIC OF SOUTH AFRICA

Indwe Building, Government Boulevard, Riverside Park, Ext. 2, Mbombela, 1200, Mpumalanga Province
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Tel I: +27 (13) 766 3429, Fax: +27 (13) 766 3458

Litiko Letemphilo | Departement van Gesondheid | UmNyango WezeMaphilo

Enq: 013 766 3766
Ref: MP_202201_003

Research Permission Letter

Ms A Dunnell
H7 HOLLYBANK
Johannesburg, 2196

STUDY TITLE: FACTORS ASSOCIATED WITH BURNOUT AMONG HEALTHCARE WORKERS IN A RURAL CONTEXT, SOUTH AFRICA: A CROSS-SECTIONAL STUDY

Dear Ms Dunnell

The Provincial Department of Health Research Committee has approved your research proposal in the latest format you sent, and hereby grant you permission to conduct your research as detailed below.

- **Approval Reference Number:** **MP_202201_003**
- **Data Collection Period:** **15 April 2022 to 30 December 2022**
- **Approved Data Collection Facilities:**

BOSCHFONTEIN CLINIC; BUFFELSPRUIT CHC; DLUDLUMA CLINIC; DRIEKOPPIES CLINIC; FIG TREE CLINIC; JEPPES REEF CLINIC; JEPPES RUST CLINIC; KAMHLUSHWA CLINIC; KOMATIPOORT CLINIC; LANGLOOP CHC; MALELANE ESTATES CLINIC; MANANGA CHC; MANGWENI CHC; MASIBEKELA CLINIC; MBANGWANE CLINIC; MBUZINI CLINIC; MGOBODI CHC; MIDDELPLAAS CLINIC; MZINTI CLINIC; NAAS CHC; NDINDINDI CLINIC; PHIVA CLINIC; RICHTERSHOEK CLINIC; SCHOEMANSDAL CLINIC; SHONGWE HOSPITAL; SIBANGE CLINIC; SIHLANGU CLINIC; SIKHWAHLANE CLINIC; STEENBOK CLINIC; STRYDOMBLOCK CLINIC; TONGA BLOCK B CLINIC; TONGA BLOCK C CLINIC & TONGA HOSPITAL

Kindly ensure that conditions mentioned below are adhered to, and that the study is conducted with minimal disruption and impact on our staff, and also ensure that you provide us with a soft or hard copy of the report once your research project has been completed.

Conditions:

- *Researchers not allowed to make copies or take pictures of medical records.*
- *Kindly notify the facility manager a week BEFORE you start with data collection to ensure that conditions are conducive in the facility.*
- *The FINAL RESEARCH FINDINGS must be uploaded on the NHRD website.*

Kind regards

DR C NELSON
MPUMALANGA PHRC CHAIRPERSON
DATE: 05/04/2022

MPUMALANGA PROVINCE
DEPARTMENT OF HEALTH
07 -04- 2022
PRIVATE BAG X11285
NELSPRUIT 1200

MPUMALANGA
THE PLACE OF THE RISING SUN

Appendix 4: Letters of Support

Nkomazi District Manager

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Tel I: +27 (13) 766 3429, Fax: +27 (13) 766 3458

Litiko Letemphilo | Departement van Gesondheid | UmNyango WezeMaphilo

Letter of Support (To be signed by relevant Senior Managers/Responsibility Managers)

1. Study Details	
1.1 Name of Applicant	Alexandra Dunnell
1.2 Contact Number:	**(0)** 842572950
1.3 Study Title:	Factors associated with burnout in public sector healthcare workers in a rural context, South Africa
1.4 Data collection period to undertake the study:	**Start:** 12/2021 **End:** 05/2022

1.5 Provide summary of the study, study area, and how data will be collected (your response should not be more than the space provided:

Introduction:
COVID-19 has meant that healthcare workers (HCW) at frontline care are vulnerable to increased occupational stress due to exposure to infection, increased workloads and difficult working conditions. Burnout is considered to be a response to prolonged work-related stress.

Aim:
The research aims to describe the risk and protective factors associated with burnout among healthcare workers employed by the Department of Health within the Nkomazi Local Municipality, Mpumalanga, in 2022.

Data collection:
A quantitative study design using a cross-sectional survey will be employed. Data will be collected via a self-administered, electronic questionnaire, to limit in-person contact in compliance with COVID-19 regulations. Data will be entered using the Research Electronic Data Capture (REDCap) platform. Participants can complete the questionnaire online on their desktop computer or laptop, or through the REDCap Mobile App on their smart phone or tablet.

Participants:
The study population will comprise of HCW employed by the DOH in the Nkomazi Local Municipality in 2022. Convenience sampling will be utilized to increase response rates of participants.

Study area:
The research is situated within the context of the Nkomazi Local Municipality, recruiting participants in both district hospitals (Shongwe Hospital and Tonga Hospital), the six community health centres and 26 primary health care clinics.

2. Resources Required from Facility/Sub-district/Community

2.1 Facility Staff Required to assist with the Study	**Yes** ☐ **How many:** Nurses: Doctors: Space: Other, please specify: none	**NO** ●
2.2 Patients / Researchers' Records/Files	**Yes** ☐ Year: From: To:	**NO** ●
2.3 Interviewing Patients/ participants at Facilities	**Yes** ☐	**NO** ●
2.4 Interviewing Patients/ participants at Home	**Yes** ☐	**NO** ●
2.5 Other, please specify:	Healthcare workers are participants need to complete the online questionnaire. Number to support sample size as indicated in protocol	

3 Resource flow/benefits to the Provincial Department

3.1 The research is responsive to which National/Provincial/departmental priority/strategy/research agenda.

- **State your response:** Mental Health policy framework

3.2 Resource Flow (Are there benefits to Patients/community)	**Yes** ☐ Please list: all potential remedial ideas emanated from research will be taken up for healthcare practice and policy	**NO** ●
3.3 Resource Flow (Are there benefits to Facility/District)	**Yes** ● Please list: to create a linkage between all research stakeholders The factors associated with burnout among HCW in a rural, South African setting will be understood, so that support and interventions offered to HCW can be effective. HCW will ⊞	**NO** ☐

4 Availability of Required Clearance/s

4.1 Ethical Clearance	**Yes** ☐ Clearance Number:	**Pending** ●	**NO** ☐
4.2 Clinical Trial	**Yes** ☐ Clearance Number:	**Pending** ☐	**NO** ●
4.3 Vaccine Trial	**Yes** ☐ Clearance Number:	**Pending** ☐	**NO** ●
4.4 Is conducted in a village led by tribal authority?	**Yes** ☐ Date tribal authority engaged:	Not Applicable ●	**NO** ☐

Please note that this letter is not an approval to undertake a study, but a support letter from identified facility/district.
i.e. the CEO/District Manager acknowledges to have been consulted on the study

5 Declaration

Declaration by Applicant:

I Mr/Ms/Dr/Prof/Adv. Alexandra Dunnell agree to submit/present the result of this study back to the CEO/Institution/District.

Estimated date of feedback: 30-Jun-22

To be signed by a relevant CEO/District Manager/Programme Manager/Senior Manager in Mpumalanga Province

Supported / Not Supported

Signature: _____ **Date:** 23/07/2021

Name: S Mdluli

MPUMALANGA PROV. GOVERNMENT
EHLANZENI DISTRICT OFFICE
PRIVATE BAG X 11278
66 ANDERSON STREET NELSPRUIT 1200
Date Received 2021 -07- 23
Stamp
DISTRICT MANAGER`S OFFICE
DEPARTMENT OF HEALTH

A duly signed form can be uploaded on the nhrd website by the researcher or emailed to: JerryS@mpuhealth.gov.za or ThembaM@mpuhealth.gov.za

Please note that this letter is not an approval to undertake a study, but a support letter from identified facility/district.
i.e. the CEO/District Manager acknowledges to have been consulted on the study

Shongwe Hospital

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REPUBLIC OF SOUTH AFRICA

Shongwe Hospital, Jeppes Reef Road, Schoemansdal, Shongwe Mission, 1331, Mpumalanga Province
Private Bag X301, Shongwe Mission, 1331
Tel I: +27 (13) 781 3000, Fax: +27 (13) 781 3104

Litiko Letemphilo | Departement van Gesondheid | UmNyango WezeMaphilo

Enq: Mr. X.E ZULU
013 781 3091

TO: **MS. ALEXANDRA DUNNELL**
RESEARCH PROTOCOL FOR MASTERS IN PUBLIC HEALTH (RURAL HEALTH)

FROM: **MR P.B MABUZA**
CHIEF EXECUTIVE OFFICER
SHONGWE HOSPITAL

DATE: **02 AUGUST 2021**

SUBJECT: **PERMISSION FOR MS ALEXANDRA DUNNELLTO CONDUCT RESEARCH AT SHONGWE HOSPITAL.**

1. The above matters bears reference.

2. In line with the Mpumalanga Provincial Research Policy, Permission is hereby granted to Ms Alexandra Dunnells to conduct the study research within the institution pending approval from the Provincial Health Research Committee (PHRC).

3. The researcher is expected to provide the institution with the results of the study. Furthermore, the institution expects the researcher to adhere to the research policies within the Mpumalanga Department. As part of the research and innovation, the researcher will have to register the research project in the websites within the Provincial database.

4. In case of further information about the permission of conduction the research project, the institution can be contacted on the following details: CEO's office: 013 781 3107 patricmab@mpuhealth.gov.za.

Kind regards.

MR. P.B MABUZA
CEO: SHONGWE HOSPITAL
02/08/2021

SHONGWE HOSPITAL
PRIVATE BAG X301
2021 -08- 13
HUMAN RESOURCE MANAGEMENT
DEPARTMENT OF HEALTH

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Tel I: +27 (13) 766 3429, Fax: +27 (13) 766 3458

Litiko Letemphilo | Departement van Gesondheid | UmNyango WezeMaphilo

Letter of Support (To be signed by relevant Senior Managers/Responsibility Managers)

1. Study Details	
1.1 Name of Applicant	Alexandra Dunnell
1.2 Contact Number:	**(0)** 842572950
1.3 Study Title:	Factors associated with burnout in public sector healthcare workers in a rural context, South Africa
1.4 Data collection period to undertake the study:	**Start:** 12/2021 **End:** 05/2022

1.5 Provide summary of the study, study area, and how data will be collected (your response should not be more than the space provided:

Introduction:
COVID-19 has meant that healthcare workers (HCW) at frontline care are vulnerable to increased occupational stress due to exposure to infection, increased workloads and difficult working conditions. Burnout is considered to be a response to prolonged work-related stress.

Aim:
The research aims to describe the risk and protective factors associated with burnout among healthcare workers employed by the Department of Health within the Nkomazi Local Municipality, Mpumalanga, in 2022.

Data collection:
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Study area:
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2. Resources Required from Facility/Sub-district/Community

2.1 Facility Staff Required to assist with the Study	**Yes** ☐ **How many:** Nurses: Doctors: Space: Other, please specify: none	NO ●
2.2 Patients / Researchers' Records/Files	**Yes** ☐ Year: From: To:	NO ●
2.3 Interviewing Patients/ participants at Facilities	**Yes** ☐	NO ●
2.4 Interviewing Patients/ participants at Home	**Yes** ☐	NO ●
2.5 Other, please specify:	Healthcare workers are participants need to complete the online questionnaire. Number to support sample size as indicated in protocol	

3 Resource flow/benefits to the Provincial Department

3.1 The research is responsive to which National/Provincial/departmental priority/strategy/research agenda.

- **State your response:** Mental Health policy framework

3.2 Resource Flow (Are there benefits to Patients/community)	**Yes** ☐ Please list: all potential remedial ideas emanated from research will be taken up for healthcare practice and policy	NO ●
3.3 Resource Flow (Are there benefits to Facility/District)	**Yes** ● Please list: to create a linkage between all research stakeholders The factors associated with burnout among HCW in a rural, South African setting will be understood, so that support and interventions offered to HCW can be effective. HCW will [illegible]	NO ☐

4 Availability of Required Clearance/s

4.1 Ethical Clearance	**Yes** ☐ Clearance Number:	**Pending** ●	NO ☐
4.2 Clinical Trial	**Yes** ☐ Clearance Number:	**Pending** ☐	NO ●
4.3 Vaccine Trial	**Yes** ☐ Clearance Number:	**Pending** ☐	NO ●
4.4 Is conducted in a village led by tribal authority?	**Yes** ☐ Not Applicable ● Date tribal authority engaged:		NO ☐

Please note that this letter is not an approval to undertake a study, but a support letter from identified facility/district.
i.e. the CEO/District Manager acknowledges to have been consulted on the study

5 Declaration

Declaration by Applicant:

I Mr/Ms/Dr/Prof/Adv. Alexandra Dunnell agree to submit/present the result of this study back to the CEO/Institution/District.

Estimated date of feedback: 30-Jun-22

To be signed by a relevant CEO/District Manager/Programme Manager/Senior Manager in Mpumalanga Province

Supported / ~~Not Supported~~

Signature: _____ **Date:** 02/08/2021

Name: P.B Mabuza

Stamp

SHONGWE HOSPITAL
PRIVATE BAG X301
2021 -08- 03
HUMAN RESOURCE MANAGEMENT
DEPARTMENT OF HEALTH

A duly signed form can be uploaded on the nhrd website by the researcher or emailed to: JerryS@mpuhealth.gov.za **or** ThembaM@mpuhealth.gov.za

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Litiko Letemphilo | Departement van Gesondheid | UmNyango WezeMaphilo

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2.4 Interviewing Patients/ participants at Home	**Yes** ☐	**NO** ●
2.5 Other, please specify:	Healthcare workers are participants need to complete the online questionnaire. Number to support sample size as indicated in protocol	

3 Resource flow/benefits to the Provincial Department

3.1 The research is responsive to which National/Provincial/departmental priority/strategy/research agenda.

- **State your response:** Mental Health policy framework

3.2 Resource Flow (Are there benefits to Patients/community)	**Yes** ☐ Please list: all potential remedial ideas emanated from research will be taken up for healthcare practice and policy	**NO** ●
3.3 Resource Flow (Are there benefits to Facility/District)	**Yes** ● Please list: to create a linkage between all research stakeholders The factors associated with burnout among HCW in a rural, South African setting will be understood, so that support and interventions offered to HCW can be effective. HCW will	**NO** ☐

4 Availability of Required Clearance/s

4.1 Ethical Clearance	**Yes** ☐ Clearance Number:	**Pending** ●	**NO** ☐
4.2 Clinical Trial	**Yes** ☐ Clearance Number:	**Pending** ☐	**NO** ●
4.3 Vaccine Trial	**Yes** ☐ Clearance Number:	**Pending** ☐	**NO** ●
4.4 Is conducted in a village led by tribal authority?	**Yes** ☐ Not Applicable ● Date tribal authority engaged:		**NO** ☐

Please note that this letter is not an approval to undertake a study, but a support letter from identified facility/district.
i.e. the CEO/District Manager acknowledges to have been consulted on the study

5 Declaration

Declaration by Applicant:

I Mr/Ms/Dr/Prof/Adv. Alexandra Dunnell agree to submit/present the result of this study back to the CEO/Institution/District.

Estimated date of feedback: 30-Jun-22

To be signed by a relevant CEO/District Manager/Programme Manager/Senior Manager in Mpumalanga Province

Supported / Not Supported

Research supported.

Signature: _____ **Date:** 08/11/2021

Name: Victor

TONGA HOSPITAL
CHIEF EXECUTIVE OFFICER
2021 -11- 08
PO BOX 661
KWALUGEDLANE 1341
DEPARTMENT OF HEALTH

A duly signed form can be uploaded on the nhrd website by the researcher or emailed to: JerryS@mpuhealth.gov.za or ThembaM@mpuhealth.gov.za

Please note that this letter is not an approval to undertake a study, but a support letter from identified facility/district.
i.e. the CEO/District Manager acknowledges to have been consulted on the study

Appendix 5: MBI license

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Maslach Burnout Inventory™

Instruments and Scoring Keys

Includes MBI Forms:

Human Services - MBI-HSS
Medical Personnel - MBI-HSS (MP)
Educators - MBI-ES
General - MBI-GS
Students - MBI-GS (S)

Christina Maslach
Susan E. Jackson
Michael P. Leiter
Wilmar B. Schaufeli
Richard L. Schwab

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info@mindgarden.com
www.mindgarden.com

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Maslach Burnout Inventory forms: Human Services Survey, Human Services Survey for Medical Personnel, Educators Survey, General Survey, or General Survey for Students.

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Citation of the instrument must include the applicable copyright statement listed below.
Sample Items:

MBI - Human Services Survey - MBI-HSS:
I feel emotionally drained from my work.
I have accomplished many worthwhile things in this job.
I don't really care what happens to some recipients.

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MBI - Human Services Survey for Medical Personnel - MBI-HSS (MP):
I feel emotionally drained from my work.
I have accomplished many worthwhile things in this job.
I don't really care what happens to some patients.

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MBI - Educators Survey - MBI-ES:
I feel emotionally drained from my work.
I have accomplished many worthwhile things in this job.
I don't really care what happens to some students.

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Cont'd on next page

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MBI - General Survey - MBI-GS:

I feel emotionally drained from my work.
In my opinion, I am good at my job.
I doubt the significance of my work.

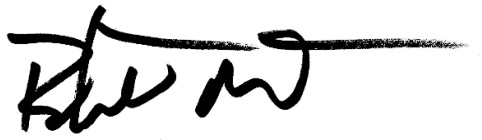
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MBI - General Survey for Students - MBI-GS (S):

I feel emotionally drained by my studies.
In my opinion, I am a good student.
I doubt the significance of my studies.

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Sincerely,



Robert Most
Mind Garden, Inc.
www.mindgarden.com

Appendix 6: Data Collection Tool (online questionnaire)

Factors Associated with Burnout in Healthcare Workers

Consent

I have read the information which explains the study	◯ Yes ◯ No
I understand that all information submitted will be anonymous and that I may withdraw at any time without giving any reasons.	◯ Yes ◯ No

Instructions

This questionnaire is self-administered and is to be completed by the participant.

This questionnaire is anonymous. Please do NOT write your name anywhere on this questionnaire.

Please answer each question honestly. There are no right or wrong answers.

Please complete every question.

Click on the option to choose your answer.

Choose only ONE answer option unless otherwise indicated.

Choose ALL possible answer options where indicated.

The questionnaire has 5 sections.

Sociodemographic Details

What is your date of birth?	_____
My age is	_____
What is your gender?	◯ Male ◯ Female ◯ Other ◯ I prefer not to say
What is your ethnicity?	◯ Black ◯ White ◯ Coloured ◯ Indian or Asian ◯ Other ◯ I prefer not to say
Are you a South African citizen?	◯ Yes ◯ No
Did you move from another place to the place where you are currently working?	◯ Yes ◯ No

How long ago did you move?

_____
(Specify if answer is in years, months, weeks or days)

Which town is closest to where you live?

_____

What is the highest level of education you have completed?

◯ I did not complete primary school
◯ Primary school
◯ High school
◯ Tertiary level

What is your marital status?

◯ Single, never been married
◯ Married
◯ Living together like married partners
◯ Separated
◯ Divorced
◯ Widowed

Do you have children?

◯ Yes
◯ No

Number of children

_____

Do you follow a religion?

◯ Yes
◯ No

Occupational Profile

How many years of work experience do you have in the health sector?

_____
(Specify if answer is in years, months, weeks or days)

How long have you worked in your current health facility?

_____
(Specify if answer is in years, months, weeks or days)

Which type of facility do you work in?

◯ District hospital
◯ Primary Healthcare (PHC) Clinic
◯ Community Health Centre (CHC)

Which category best describes your current professional group?	◯ Audiology ◯ Biokinetics ◯ Clinical Associates ◯ Dentistry ◯ Dietetics ◯ Medical Practitioners and Specialists ◯ Medical Technology ◯ Medical Orthotists and Prosthetics ◯ Nursing Professionals ◯ Occupational Therapy ◯ Pharmacy ◯ Physiotherapy ◯ Podiatry ◯ Psychology ◯ Radiography ◯ Social Work ◯ Speech and Language Therapy
What is your official job title?	_____
What is your current rank?	_____
What are your average working hours? e.g. from 7h30 - 16h00	_____
Do you do shift work?	◯ Yes ◯ No
Do you work night shifts, i.e. any time between 18h00 (6 PM) and 07h00 (7 AM)?	◯ Yes ◯ No
What is your job status?	◯ Permanent ◯ Contract

Maslach Burnout Inventory (MBI)

Below, there are 22 statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, choose the number "0" (zero) in the space before the statement. If you have had this feeling, indicate how often you feel it by choosing the number (from 1 to 6) that best describes how frequently you feel that way.

	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
I feel emotionally drained from my work.	◯	◯	◯	◯	◯	◯	◯
I feel used up at the end of the workday.	◯	◯	◯	◯	◯	◯	◯

I feel fatigued when I get up in the morning and have to face another day on the job.	○	○	○	○	○	○	○
I can easily understand how my patients feel about things.	○	○	○	○	○	○	○
I feel I treat some patients as if they were impersonal objects.	○	○	○	○	○	○	○
Working with people all day is really a strain for me.	○	○	○	○	○	○	○
I deal very effectively with the problems of my patients.	○	○	○	○	○	○	○
I feel burned out from my work.	○	○	○	○	○	○	○
I feel I'm positively influencing other people's lives through my work	○	○	○	○	○	○	○
I've become more callous toward people since I took this job.	○	○	○	○	○	○	○
I worry that this job is hardening me emotionally.	○	○	○	○	○	○	○
I feel very energetic.	○	○	○	○	○	○	○
I feel frustrated by my job.	○	○	○	○	○	○	○
I feel I'm working too hard on my job.	○	○	○	○	○	○	○
I don't really care what happens to some patients.	○	○	○	○	○	○	○
Working with people directly puts too much stress on me.	○	○	○	○	○	○	○
I can easily create a relaxed atmosphere with my patients.	○	○	○	○	○	○	○
I feel exhilarated after working closely with my patients.	○	○	○	○	○	○	○
I have accomplished many worthwhile things in this job.	○	○	○	○	○	○	○
I feel like I'm at the end of my rope.	○	○	○	○	○	○	○
In my work, I deal with emotional problems very calmly.	○	○	○	○	○	○	○
I feel patients blame me for some of their problems.	○	○	○	○	○	○	○

Working Conditions (HSE Management Standards Indicator Tool)

It is recognized that working conditions affect worker well-being. It is important that your responses reflect your work in the last six months.

	Never	Seldom	Sometimes	Often	Always
I am clear what is expected of me at work	○	○	○	○	○
I can decide when to take a break	○	○	○	○	○
Different groups at work demand things from me that are hard to combine	○	○	○	○	○
I know how to go about getting my job done	○	○	○	○	○
I am subject to personal harassment in the form of unkind words or behaviour	○	○	○	○	○
I have unachievable deadlines	○	○	○	○	○
If work gets difficult, my colleagues will help me	○	○	○	○	○
I am given supportive feedback on the work I do	○	○	○	○	○
I have to work very intensively	○	○	○	○	○
I have a say in my own work speed	○	○	○	○	○
I am clear what my duties and responsibilities are	○	○	○	○	○
I have to neglect some tasks because I have too much to do	○	○	○	○	○
I am clear about the goals and objectives for my department	○	○	○	○	○
There is friction or anger between colleagues	○	○	○	○	○
I have a choice in deciding how I do my work	○	○	○	○	○
I am unable to take sufficient breaks	○	○	○	○	○
I understand how my work fits into the overall aim of the organization	○	○	○	○	○
I am pressured to work long hours	○	○	○	○	○
I have a choice in deciding what I do at work	○	○	○	○	○

I have to work very fast	○	○	○	○	○
I am subject to bullying at work	○	○	○	○	○
I have unrealistic time pressures	○	○	○	○	○
I can rely on my line manager to help me out with a work problem	○	○	○	○	○
I get help and support I need from colleagues	○	○	○	○	○
I have some say over the way I work	○	○	○	○	○
I have sufficient opportunities to question managers about change at work	○	○	○	○	○
I receive the respect at work I deserve from my colleagues	○	○	○	○	○
Staff are always consulted about change at work	○	○	○	○	○
I can talk to my line manager about something that has upset or annoyed me about work	○	○	○	○	○
My working time can be flexible	○	○	○	○	○
My colleagues are willing to listen to my work-related problems	○	○	○	○	○
When changes are made at work, I am clear how they will work out in practice	○	○	○	○	○
I am supported through emotionally demanding work	○	○	○	○	○
Relationships at work are strained	○	○	○	○	○
My line manager encourages me at work	○	○	○	○	○

General Help Seeking Questionnaire (GHSQ)

If you were having a personal or emotional problem, how likely is it that you would seek help from the following people?

	Extremely Unlikely	Unlikely	Likely	Extremely Likely
Intimate partner (e.g., girlfriend, boyfriend, husband, wife, de' facto)	○	○	○	○
Friend (not related to you)	○	○	○	○
Parent	○	○	○	○

Other relative/family member	◯	◯	◯	◯
Mental health professional (e.g. psychologist, social worker, counsellor)	◯	◯	◯	◯
Phone helpline (e.g. Lifeline)	◯	◯	◯	◯
Doctor/GP	◯	◯	◯	◯
Minister or religious leader (e.g. Priest, Pastor, Chaplain)	◯	◯	◯	◯
Traditional healer or community leader	◯	◯	◯	◯
I would not seek help from anyone	◯	◯	◯	◯
I would seek help from another not listed above	◯	◯	◯	◯

If you experience distress or discomfort at any point, you can choose to opt out of answering the online questionnaire. A resource sheet with telephonic helplines is below should the questions being asked are triggering.



MENTAL HEALTH RESOURCES

There are a number of telephonic helplines that are available. There is nothing wrong in asking for help.



How to get help:

1 HEALTHCARE WORKERS CARE NETWORK HELPLINE
Call 0800 21 21 21
SMS 43001
24 hours
Free of charge



2 COVID-19 TRAUMA DEBRIEFING & COUNSELLING
Community Intervention Centre
082 821 3447
24 hours
Free of charge



3 DOVE CARE ON CALL
Call 0800 111 019
24 hours
Free of charge

4 SUICIDE CRISIS LINE
Call 0800 567 567
24 hours
Free of charge



5 SOUTH AFRICAN DEPRESSION & ANXIETY GROUP
Mental Health Line 011 234 4837
Call 0800 567 567
24 hours
Free of charge
www.sadag.org



6 CIPLA MENTAL HEALTH HELPLINE
Call 0800 456 789
24 hours
Free of charge
WhatsApp 076 882 2775 9am-4pm



Compiled in June 2021
by A. Dunnell

Appendix 7: HSE tool

Health and Safety Executive

HSE MANAGEMENT STANDARDS INDICATOR TOOL

Instructions: It is recognised that working conditions affect worker well-being. Your responses to the questions below will help us determine our working conditions now, and enable us to monitor future improvements. In order for us to compare the current situation with past or future situations, it is important that your responses reflect your work in the last six months.

1	I am clear what is expected of me at work	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
2	I can decide when to take a break	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
3	Different groups at work demand things from me that are hard to combine	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
4	I know how to go about getting my job done	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
5	I am subject to personal harassment in the form of unkind words or behaviour	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
6	I have unachievable deadlines	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
7	If work gets difficult, my colleagues will help me	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
8	I am given supportive feedback on the work I do	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
9	I have to work very intensively	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
10	I have a say in my own work speed	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
11	I am clear what my duties and responsibilities are	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
12	I have to neglect some tasks because I have too much to do	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
13	I am clear about the goals and objectives for my department	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
14	There is friction or anger between colleagues	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
15	I have a choice in deciding how I do my work	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
16	I am unable to take sufficient breaks	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
17	I understand how my work fits into the overall aim of the organisation	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
18	I am pressured to work long hours	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
19	I have a choice in deciding what I do at work	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5

20	I have to work very fast	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
21	I am subject to bullying at work	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
22	I have unrealistic time pressures	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
23	I can rely on my line manager to help me out with a work problem	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
24	I get help and support I need from colleagues	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
25	I have some say over the way I work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
26	I have sufficient opportunities to question managers about change at work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
27	I receive the respect at work I deserve from my colleagues	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
28	Staff are always consulted about change at work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
29	I can talk to my line manager about something that has upset or annoyed me about work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
30	My working time can be flexible	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
31	My colleagues are willing to listen to my work-related problems	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
32	When changes are made at work, I am clear how they will work out in practice	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
33	I am supported through emotionally demanding work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
34	Relationships at work are strained	Strongly disagree ☐5	Disagree ☐4	Neutral ☐3	Agree ☐2	Strongly agree ☐1
35	My line manager encourages me at work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5

Thank you for completing the questionnaire.

Appendix 8: GHSQ questionnaire

GENERAL HELP-SEEKING QUESTIONNAIRE – Original Version (GHSQ)

Question 1 = Personal or emotional problems

Question 2 = Suicidal ideation

***Note*:** In all questions, items a-j measure **help-seeking intentions**.

Help sources should be modified to match the target population.

1. If you were having a personal or emotional problem, how likely is it that you would seek help from the following people?

Please indicate your response by putting a line through the number that best describes your intention to seek help from each help source that is listed.

1 = Extremely Unlikely 3 = Unlikely 5 = Likely 7 = Extremely Likely

a. Intimate partner (e.g., girlfriend, boyfriend, husband, wife, de' facto)	1	2	3	4	5	6	7
b. Friend (not related to you)	1	2	3	4	5	6	7
c. Parent	1	2	3	4	5	6	7
d. Other relative/family member	1	2	3	4	5	6	7
e. Mental health professional (e.g. psychologist, social worker, counsellor)	1	2	3	4	5	6	7
f. Phone helpline (e.g. Lifeline)	1	2	3	4	5	6	7
g. Doctor/GP	1	2	3	4	5	6	7
h. Minister or religious leader (e.g. Priest, Rabbi, Chaplain)	1	2	3	4	5	6	7
i. I would not seek help from anyone	1	2	3	4	5	6	7
j. I would seek help from another not listed above (please list in the space provided, (e.g., work colleague. If no, leave blank)_____	1	2	3	4	5	6	7

2. If you were experiencing suicidal thoughts, how likely is it that you would seek help from the following people?

Please indicate your response by putting a line through the number that best describes your intention to seek help from each help source that is listed.

1 = Extremely Unlikely 3 = Unlikely 5 = Likely 7 = Extremely Likely

a. Intimate partner (e.g., girlfriend, boyfriend, husband, wife, de' facto)	1	2	3	4	5	6	7
b. Friend (not related to you)	1	2	3	4	5	6	7
c. Parent	1	2	3	4	5	6	7
d. Other relative/family member	1	2	3	4	5	6	7
e. Mental health professional (e.g. psychologist, social worker, counsellor)	1	2	3	4	5	6	7
f. Phone helpline (e.g. Lifeline)	1	2	3	4	5	6	7
g. Doctor/GP	1	2	3	4	5	6	7
h. Minister or religious leader (e.g. Priest, Rabbi, Chaplain)	1	2	3	4	5	6	7
i. I would not seek help from anyone	1	2	3	4	5	6	7
j. I would seek help from another not listed above (please list in the space provided, e.g., work colleague. If no, leave blank)_____	1	2	3	4	5	6	7