

***CONTRIBUTORY FACTORS TO BURNOUT SYNDROME IN OBSTETRICS
AND GYNAECOLOGY AT TYGERBERG HOSPITAL***

by

Dr SAIDA ALI

*Thesis presented in fulfilment of the requirements for the degree of
Master of Medicine
in the Faculty of Medicine and Health Sciences at Stellenbosch University*

Supervisor: Dr D Masimila

March 2024



Declaration:

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

.....

Dr Saida Ali

..... March.....2024

Copyright © 2024 Stellenbosch University
All rights reserved

ABSTRACT

Burnout has been widely recognised as a debilitating psychological condition that develops over time leading to increasing misalignment between an individual's intentions and the realities of their environment. Burnout leads to feelings of exhaustion, distress, overwhelming emotions and negative attitudes towards the environment, and this leads to increasing in lack of interest, impersonal engagement, emotional detachment and inability to be efficient and deliver good service. The World Health Organisation recognizes burnout as a risk to the healthcare sector and may negatively impact healthcare outcomes, especially in developing countries. This study aimed to evaluate the prevalence of burnout syndrome and factors leading to its development in a cohort of doctors in Obstetrics and Gynaecology at the Tygerberg Hospital, South Africa. Using the Maslach Burnout Toolkit, 73 participants, which consists of medical officers, junior and senior registrars, and specialists, were surveyed. The Maslach Burnout Toolkit combines the Burnout inventory dimensions and the areas of Worklife Survey which assess the perceptions of worklife areas. The survey showed that 80.8% of the participants reported a moderate to high prevalence of emotional exhaustion, as well as 69.9% moderate to high levels of depersonalisation and low personal achievement respectively. There were no differences in burnout syndrome reported between genders. However, those who were in the organisation and in the position for less than 5 years reported high levels of burnout while those who were in the organisation and held a senior position for more than 20 years reported low burnout. Participants with under 5 years in the organisation and position reported less alignment on all Areas of Worklife assessed, especially for workload. Workload and fairness alignment contributed significantly to development of burnout. For every increase in workload alignment there was a resulting 8.31 times decrease in emotional exhaustion, and 3.30 times decrease in depersonalisation. Increased alignment with fairness resulted in a decrease in emotional exhaustion. Workplace characteristics are crucial to the wellbeing of healthcare workers and human resource practices need to ensure these are aligned and supportive. Increased burnout will likely cause a decrease in job satisfaction and promote the feeling to leave the healthcare sector or specific position held among the healthcare workers (Payne et al 2020). Young doctors need more time to learn theory and practical applications, aiding the need for continued support and mentorship, as well as enough resting time to ensure their mental health and wellbeing is looked after. This research highlights the importance of creating a supportive work environment for healthcare workers to prevent burnout and optimise healthcare delivery.

Keywords: Maslach Burnout toolkit, burnout prevalence, workplace alignment, healthcare sector

Table of Contents

ABSTRACT	ii
1 Introduction.....	5
1.1 Prevalence of Burnout among healthcare workers.....	6
1.2 The Maslach Burnout Toolkit	8
1.2.1 Assessment of burnout prevalence and determinant factors.....	9
1.3 Justification for the study	9
1.4 Purpose and objectives of the study	10
2 Methods	11
2.1 Setting and Study population:	11
2.1.1 Ethical clearance and ethics statement.....	11
2.2 Data collection using Maslach Burnout Toolkit.....	11
2.2.1 Maslach Burnout Inventory	11
2.2.2 Areas of Worklife Survey	12
2.3 Data Analysis approach	13
2.3.1 Descriptive statistics	13
2.3.2 Scale reliability and construct validity	14
2.3.3 Inferential statistics	14
3 Results	14
3.1 Scale reliability and internal consistency.....	14
3.2 Biographical characteristics and descriptive statistics	15
3.3 Prevalence of Burnout among burnout amongst clinicians within the obstetrics and gynecology department.....	16
3.3.1 Areas of Worklife Balance	17
3.3.2 AWB by gender.....	18
3.3.3 AWB by time in organization	19
3.3.4 AWS by Time in Position.....	20

3.4	Factors contributing to burnout amongst clinicians within the obstetrics and gynecology department.....	21
3.4.1	Regression results- influence of worklife dimensions on Burnout syndrome	21
3.4.2	Identifying predictors of burnout syndrome	21
4	Discussion and Conclusions	23
4.1	Workload and long hours predict onset and prevalence of burnout.....	24
4.2	Increased prevalence of burnout at the start of the career.....	25
4.3	Impact of workload on the retention of young doctors.....	26
4.4	Conclusions.....	27
4.5	Limitations of the study.....	27
4.6	Recommendation	28
5	References.....	29
6	Appendices	33
6.1	Study Approval letter	33

CONTRIBUTORY FACTORS TO BURNOUT SYNDROME IN OBSTETRICS AND GYNAECOLOGY AT TYGERBERG HOSPITAL

1 Introduction

Burnout is a condition of emotional, mental and physical exhaustion produced by extreme stress and healthcare workers are at risk to develop burnout syndrome due to the constant change of the healthcare environment and the need to be at par with these changes. Burnout, as defined by Schaufeli and Enzmann (1998), characterizes a persistent, negative, work-related state affecting individuals, marked by exhaustion, distress, diminished effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours within the workplace (Payne et al., 2020; Circenis and Millere, 2011). This psychological condition evolves gradually due to a misalignment between professional intentions and the realities encountered in the job or occupation, often resulting from an extended period of dedicating excessive time, energy, and effort to work without sufficient physical or emotional recovery (Payne et al., 2020; Thorsen et al., 2011; Schaufeli and Enzmann, 1996). The behavioural and attitudinal manifestations of burnout encompass a loss of concern for clients, fatalism about one's work, declining motivation, negativism, frequent irritability and anger towards clients and colleagues, rationalization of failure by blaming clients or the system, resistance to change, growing rigidity, and loss of creativity (Maslach et al., 2001). Simultaneously, the physical symptoms of burnout include chronic fatigue, frequent colds, flu, headaches, gastrointestinal disturbances, insomnia, excessive use of drugs, decline in self-esteem, and marital and family conflicts which also results in increased absenteeism (Engelbrecht et al., 2008; Konlan et al., 2022). All these factors affect the healthcare worker's ability to serve efficiently and poses a risk to patients as well as to the healthcare worker themselves (Naidoo et al., 2020). It is crucial to recognize the multifaceted nature of this phenomenon and its implications for both individual well-being and healthcare systems (Naidoo et al. 2020). In recent years, the 11th Revision of the International Classification of Disease (ICD-11) officially includes burnout as a syndrome resulting from chronic workplace stress that has not been successfully managed (Woo et al., 2019). This recognition highlights the global acknowledgement of burnout as a significant occupational health concern.

Recently burnout has been recognized by the World Health Organization and the need was recognized to amend the physician's pledge to not just provide care of the highest standard but also re-evaluate the physical and mental health of the healthcare worker. Burnout can be identified as feeling overwhelmed and unable to fulfill constant demand and therefore places the person in a psychological state in which you feel distrust and skepticism, leading to lack of work enthusiasm, and a sense of low

personal accomplishment.

Burnout, conceptualized as a three-dimensional psychological syndrome encompassing emotional exhaustion (EE), depersonalization (DP), and diminished personal achievement (PA), and has been recognized as an occupational disease (Maslach, 2001; Lastovkova et al. 2018). In its developmental stages, burnout commences with emotional exhaustion, followed by depersonalization as a coping strategy, culminating in feelings of reduced personal accomplishment. This amalgamation of negative behavioural, attitudinal, and physical changes in response to work-related stress underscores the complex nature of burnout (Maslach, 2001).

The profound impact of burnout on healthcare professionals has been well-documented, with increasing reports in recent years (Coetzee & Kluys, 2020; Konlan et al., 2022; Naidoo et al., 2020; Stodel and Stewart-Smith, 2011). Given the pivotal role healthcare workers play in the optimal functioning of health systems, burnout can negatively affect the efficiency of healthcare delivery (Fentie et al. 2021). In low- to middle-income countries (LMICs), healthcare workers exhibit a high prevalence of burnout and job dissatisfaction (Parsa-Parsi, 2017; Circenis and Millere, 2011; Dell Valle et al., 2006) due to high workload, resource limitations and increased demand burden on the healthcare services by typically large populations who depend on the public sector. In Sub-Saharan Africa, where shortages of healthcare staff are well-documented, the challenges posed by burnout are exacerbated by the increasing demand for human capital in the healthcare sector. Consequently, understanding and addressing burnout among healthcare professionals, including obstetrics and gynaecology doctors, are crucial steps in sustaining an effective healthcare system.

1.1 Prevalence of Burnout among healthcare workers

A significant number of epidemiological studies have revealed a significant increased reported burnout syndrome among healthcare workers in many parts of the world, including developed and developing countries (Al-Amari et al., 2016; Della Valle et al., 2006). The prevalence reported ranges from 25% to 80%, varying across the different specialties of healthcare professionals (Poncet et al. 2007; Felton et al. 1998; Olley, 2003; Konlan et al. 2022; Naidoo et al. 2020). Nurses and doctors typically showed higher prevalence (85%) of burnout (Olley, 2003; Naidoo et al. 2020; Payne et al. 2020) manifesting itself as physical and emotional detachment, reduced productivity, the development of depression and anxiety, and increasing instances of absenteeism with intentions to leave (Lee et al. 2017; Maslach and Leiter, 2008; Naidoo et al. 2020; Payne et al. 2020). Thus, there is an interplay between the development and prevalence of burnout, and the factors within the healthcare setting (Ramondetta et al., 2011).

Evidence from literature indicates that burnout prevalence is highest among young doctors who are in the early stages of their career, especially those doing rotations or during residency (Naidoo et al. 2020), including medical students during their years of study (Naji et al., 2021; Peisah et al., 2009). During this period, the increased demand to focus on academic and practical application of knowledge is of utmost importance, which reflects on the need for mentorship and support (Stodel and Stewart-Smith, 2011). Resident doctors work long hours and are faced with a high workload, which impacts on their ability to manage all the interplaying aspects of work. In their study, Shahi and colleagues (2022) report that resident doctors in their study worked over 80h per week and had high odds of suffering burnout. Similarly, Naidoo and colleagues (2020) also found that young doctors had significant workloads resulting in burnout, as well as increased risk of depression and anxiety. These results support the reports on the significant occupational risks associated with burnout within the healthcare setting.

Among the different clinical specialties, healthcare workers within the general surgery, obstetrics and gynaecology, and anaesthesiology departments reported higher levels of burnout, as these roles are reported to be more demanding compared to other specialities (Shahi et al. 2022; Davenport et al. 2008; Naidoo et al 2020). It is known that the obstetrician and gynaecologist (O&G) can be called to duty at any hour of the day, especially to assist with a labouring patient. Patients' lengthy labour or lengthy surgical procedures contribute to the increased risk for lack of sleep and therefore has long term effects on the physical and mental health in such a demanding profession. The long working hours in turn can have a direct effect on the quality of care provided to patients giving rise to medical errors and litigation (Payne et al. 2020). The error rate, which is caused by the lack of sleep, is most seen amongst the training gynaecologists and obstetricians (Balie et al., 2019). Trufelli and colleagues (2008) have shown that the suffering and death of patients also contributes to the development of burnout syndrome amongst O&G doctors especially where the wellbeing of both the mother and baby are involved. This has the same impact on Gynaecology oncologists dealing with psychological stress, due to the added suffering of their patients' experience based on their disease profile and the risk of dying. It therefore increases the risk for anxiety amongst this group of sub-specialist doctors, causing added work-related stress. Surgical oncologists have a 28% risk for burnout resulting from challenges which includes prolonged working hours and the need to stay on par with new technical challenges in the operating room (Ramondetta et al., 2011). In addition to this, gynaecologists have a higher number of patients, adding to the likelihood of developing burnout.

Most of the literature indicates that burnout amongst obstetricians and gynaecologists is directly related to high workload, level of experience, gender, insomnia, and depression. Young female doctors also seem to be more prone to burnout, as they do not only face the high level of pressures at work

but have their own responsibilities at home. Therefore, the totality of responsibility, whether at work or home, also has an impact on burnout. In their study, Iorga and colleagues (2017) showed that women experienced more emotional exhaustion and depersonalisation than men, even though there is no strong evidence for gender differences in studies on burnout (Balie et al., 2019).

A cross-sectional study conducted in the department of Obstetrics and Gynaecology of the University of Witwatersrand showed that emotional exhaustion and depersonalization was most experienced amongst registrars (Balie et al., 2019). This study also showed that emotional exhaustion was experienced two times higher in female registrars compared to male registrars which is similar to statistics from international medical professionals, especially amongst registrars/residents or young medical specialists (Balie et al., 2019). Similar evidence was reported by Rath and colleagues (Rath et al., 2015), who found that 32% of the participating gynaecologists, obstetricians and gynaecology oncologists reported burnout and most of them were female, with many (44.5%) reporting that they were hesitant to seek medical interventions (Rath et al., 2015). Further, the rates of depression and anxiety were higher among this group of clinical specialists (Naidoo et al. 2020). Becker et al (2006) found that depression amongst obstetrics and gynaecology residents were higher (34.2%) compared to the general population, causing higher incidence of depersonalization and emotional exhaustion. With improved support, adequate time off and reduced workload, there is evidence that the incidents of burnout and the consequences associated with it such as development of depression and anxiety, declines (Al-Ma'mari et al., 2016; Rath et al., 2015). Workload and long working hours remain the largest contributor to burnout and is evidenced by many research studies (Konlan et al 2022; Shahi et al. 2022; Coetzee and Kluyt, 2020; Naidoo et al., 2020; Ye et al., 2019; Engelbrecht et al 2008).

1.2 The Maslach Burnout Toolkit

The Maslach Burnout Inventory (MBI) is widely employed for burnout identification and focuses on three specific dimensions: emotional exhaustion (EE), depersonalization (DP), and reduced personal accomplishment (PA) (Lourel and Guegen, 2007). Serving as a "diagnostic tool," the MBI assesses these dimensions by inquiring about the frequency of feelings by using a rating scale and avoid binary agree/disagree or yes/no questions. Participants respond to the question, "how often do you feel this way?" with frequency ratings on a scale of 0-6. Individual scores for each dimension are examined separately, revealing patterns or profiles with significant implications for burnout. Based on foundational work by Freudenberger (1975) and Maslach (1976), the MBI defines burnout as a psychological syndrome emerging in response to chronic job-related stressors, especially those of an interpersonal nature (Maslach, Schaufeli and Leiter, 2001, for historical context).

The three primary dimensions of this response are (1) emotional exhaustion (EE), representing the fundamental individual stress aspect of burnout with feelings of being overextended and depleted of resources, (2) depersonalization (DP), portraying a cynical and distant attitude towards work and colleagues, capturing the interpersonal context of burnout, and (3) reduced personal accomplishment (PA), signifying a negative self-evaluation of achievements at work, addressing the self-evaluation dimension of burnout. Emotional exhaustion is commonly regarded as the central aspect of burnout, serving as the most evident manifestation of the syndrome.

1.2.1 Assessment of burnout prevalence and determinant factors

Development of burnout results from a combination of environmental factors that impact on the wellbeing of an individual, as a response to these work pressures. To pinpoint factors or attributes in the workplace that determine or predict burnout, Leiter and Maslach (1999) conducted an extensive examination of theoretical and empirical literature concerning job stress and burnout.

They identified six pivotal facets of work life that significantly influence individuals' connection with their work: workload, control, reward, community, fairness, and values. Particularly, the workload aspect holds notable significance in the development of burnout, as emotional exhaustion tends to result when job demands surpass human limits (Leiter & Maslach, 2004; Kouvonen et al. 2005). The control dimension revolves around individuals' perceived ability to influence decisions related to their work, exercise personal autonomy, and access essential resources for task completion. Positive perceptions of control can be a mitigating factor and buffer against high work demands. The reward dimension, centres on how reinforcement, encompassing monetary, social, and intrinsic rewards, aligns with individuals' expectations. Perceptions of neglect by the organization's reward system can result in a sense of misalignment with its values. The community dimension evaluates the overall quality of social interactions at work, covering issues like interpersonal conflicts, social support, closeness, and teamwork. Social context emerges as a critical factor in burnout (Halbesleben, 2006). The fairness dimension focuses on the equity in decision-making and resource allocation at work, build on the principles of equity and social justice. Lastly, the values dimension encapsulates the ideals and motivations that attract individuals to their jobs. In their assessment of the linkages between burnout and areas of worklife, Leiter and Maslach (2004) point to several indicators which suggest that development and manifestation of burnout has a linear effect. The linear effect starts with increased emotional exhaustion, which in turn increases depersonalisation, and this further results into impersonal engagement, cynicism, low efficiency at work which reflect as low personal achievement.

1.3 Justification for the study

This study underscores the imperative to evaluate burnout in the context of work-related factors emphasizing the significance of employing the MBI Toolkit for a thorough assessment. The study acknowledges the potential debilitating impact of burnout on the health system, echoing Payne and colleagues' (2020) call for further research to dispel perceptions of burnout as a temporary trend. In a resource-deficient country like South Africa, understanding burnout development among healthcare workers is crucial. Notably, job stress is higher among South African physicians compared to their counterparts in Europe or the USA (Stodel and Stewart-Smith, 2011; Peltzer et al, 2003), emphasizing the need for a deeper understanding of stress factors among healthcare professionals in this region.

South Africa, often characterized by limited resources, may contribute to the emergence of burnout among its staff (Payne et al. 2020). The existing body of research has predominantly concentrated on nurses, with fewer studies exploring doctors or variations across medical specialties (; Naidoo et al. 2020; Stodel and Stewart-Smith, 2011; Engelbrecht et al., 2008). There is a paucity of studies investigating burnout among specialist practitioners such as Obstetrics and Gynaecology. Evidence from this study will contribute to better understanding of the impacts of burnout among specialist doctors.

1.4 Purpose and objectives of the study

To determine the prevalence of burnout amongst clinicians within the obstetrics and gynaecology department at a tertiary academic hospital in South Africa.

To identify the common factors contributing to burnout syndrome amongst medical professionals in the obstetrics and gynaecology department.

2 Methods

2.1 Setting and Study population:

The study was conducted among rotating clinical staff within the Department of Obstetrics and Gynaecology at Tygerberg Hospital. The profile of the participating staff included interns, medical officers, registrars (junior and senior), general specialists, sub-specialists as well as fellow specialists. The focus of this study was to evaluate the prevalence of burnout. The survey was conducted with a total of 73 participants, profile described in Table 1 below.

2.1.1 Ethical clearance and ethics statement

Ethical clearance for the study was approved, with reference number: S21/06/105

Prior to collecting the data, the participants were informed and assured of their privacy and that the information collected from the survey will always be respected and kept safe. No names or any form of identification of the participants were entered onto the datasheet. Each participant received documents explaining the aim of the study, data privacy, and that the results will only be used for this study. Participants were not affected negatively by choosing to participate or decline participation in the study. Consent forms were signed by each participant prior to completing the survey. No patients are involved in this study.

2.2 Data collection using Maslach Burnout Toolkit

Data for the study was collected using the Maslach Burnout Toolkit for Medical professionals by Mind Garden which combines the Maslach Burnout Inventory and the Areas of Work life balance survey to measure burnout in clinical staff in the context of work life balance.

2.2.1 Maslach Burnout Inventory

The study used a cross-sectional sampling approach. Clinical staff were asked to complete an online survey using the Maslach Burnout toolkit for medical professionals which combines the areas of work life survey and the Maslach Burnout Inventory (MBI) (Maslach, Schaufeli and Leiter, 2001) to measure the burnout experienced within a work life context. The MBI produces three indicators:

- **Emotional Exhaustion:** feelings of being emotionally overextended and exhausted by work. This item is the key representative dimension of burnout. Individuals scoring high, above 3.0, are considered “burned’ out. This item is often seen as the most obvious manifestation of burnout syndrome.
- **Depersonalisation:** unfeeling and impersonal responses toward recipients of one’s service, care, or treatment. Being cynical and having a distant attitude towards one’s work and the work environment.
- **Low Personal Accomplishment:** low feelings of competence and successful achievement in one’s work with patients. The personal accomplishment score should be interpreted inversely to the magnitude of the score: the lower the score the higher the PA burnout experienced.

The toolkit includes a section on Worklife Balance, which evaluates perceptions of workplace characteristics and this complements the MIB survey. The score profile allows users to pinpoint organizational strengths or weaknesses, applicable to both small workgroups and larger organizational summaries. The combined MBI + AWS Toolkit is a valuable resource for measuring the extent and likely causes of burnout.

The measures for the MIB scale include a range of statements scored between 0 and 6, such as:

- 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.

Participants respond as follows: If you never feel depressed at work, you will write the number "0" (zero) under the heading "How often." If you rarely feel depressed at work (a few times a year or less), you will write the number "1." If your feelings of depression are frequent (a few times a week but not daily), you would write the number "5." In this investigation, we embraced the burnout definition found in existing literature (Dubale et al. 2019; He et al. 2014), which identifies individuals with elevated scores on Emotional Exhaustion (EE) and Depersonalization (DP) and low scores on Personal Accomplishment (PA) as experiencing burnout. Hence, participants exhibiting high EE, high DP, and low PA were categorized as experiencing burnout, while those outside this classification were deemed not to have burnout.

2.2.2 Areas of Worklife Survey

The Areas of Worklife Survey measures aspects of the workplace that can contribute to burnout syndrome. The survey identifies the following dimensions which are measured on a 5-point Likert scale from strongly disagree to strongly agree:

1. **Workload:** Quantifies the volume of work within a specified timeframe, encompassing the impact of work demands on personal life, social pressures, and the overall physical and intellectual burden.
2. **Control:** Assesses the extent of decision-making autonomy, problem-solving opportunities, and the ability to contribute to job responsibilities, reflecting professional autonomy and participation in significant work-related decisions.
3. **Reward:** Gauges the financial and social recognition received for job contributions, including praise, awards, perks, and salary.
4. **Community:** Evaluates the quality of social interactions at work, encompassing relationships with managers, colleagues, subordinates, and patients.

- 5. **Fairness:** Examines the organization's adherence to consistent and equitable rules for all, reflecting the quality of justice and respect within the work environment.
- 6. **Values:** Explores the alignment between personal values and those inherent in the organization, emphasizing the significance of shared values in the workplace.

2.3 Data Analysis approach

Data collected was entered into an excel spreadsheet and a codebook was created. The subscales were calculated with arithmetic to yield the values for the MIB and AWS toolkit to use in the next step of data analyses. After coding and cleaning, the data were transferred to Statistical Program for Social Sciences, IBM SPSS Version 29 for further statistical analyses.

2.3.1 Descriptive statistics

Basic frequency analysis was used to assess the biographical distribution and sample characteristics. The data are represented below in tables and graphically with charts showing means and standard deviation, and percentages.

The cutoff points for the MBI scales showing the dimensions of burnout are as follows (see Stodel and Smith-Steward, 2011 and Sirsawy et al. 2016):

Table 1. Maslach Burnout Toolkit scale dimensions scores for interpretation purposes.

Degree of Burnout	Dimensions of Burnout		
	EE	DP	PA
High	>27	>13	<31
Moderate	17-26	7-12	32-38
Low	0-16	0-6	>39

i. Scale reliability and construct validity

Cronbach's alpha was used to assess scale item validity and reliability. Cronbach's alpha assesses scale reliability by comparing shared variance or covariance among the items making up the instrument. The higher the covariance and collinearity, the more reliable the items. Each of the items was assessed for reliability of scale.

ii. Inferential statistics

Inferential statistics were used to ascertain the prevalence of Burnout syndrome among rotating clinical staff in Obstetrics and Gynaecology, as well as to determine the factors which contribute to

burnout syndrome. A two-tailed T-test was used to compare the differences in MIB and AWS by gender, while the One-Way Analysis of Variance (ANOVA) was used to compare differences in MIB and AWS subscales based on Time in Position and Time in organization. A Linear regression analysis was used to determine which factors in the AWS predict the likelihood of increased burnout among the clinical staff.

3 Results

The Maslach Burnout Toolkit was administered to 75 participants, 73 responses were valid and used for the analysis in the study, a response rate of 93.7%. The toolkit combines the Maslach Burnout Inventory (MBI) and the Areas of Work life survey (AWS) to provide a realistic overview of burnout and factors contributing to it.

3.1 Scale reliability and internal consistency

Cronbach's alpha is a widely used tool to assess scale validity, reliability, and internal consistency in battery tests such as the Maslach Burnout Toolkit. The reliability coefficients for the MBI Toolkit scales ranged above 0.7 for the MBI scales EE, DP and LAP (Table 2). The same was also found for the AWS scales, however, the coefficients mostly were below 0.7, which was not consistent with previous studies on burnout, and which suggests that the scales items have moderate validity and internal consistency. This was mostly true for the scales of Workload, Reward, Community and Fairness (Table 2).

Table 2. Scale validity and internal consistency of the Maslach Burnout Toolkit.

	Scale	Cronbach α
MBI	DP	0.91
	EE	0.82
	LPA	0.83
AWS	Workload	0.64
	Control	0.77
	Reward	0.41
	Community	0.48
	Fairness	0.52
	Values	0.75

The coefficient scores for the MBI were in the range found in previous studies on burnout among healthcare professionals in South Africa. In their study, Stodel and Steward-Smith (2011), Cronbach's

alpha coefficients were as follows: EE = 0.90, DP = 0.71 and PA = 0.70. Similarly, Sirsawy et al. (2016) reported coefficients as follows: EE = 0.91, DP = 0.74 and PA = 0.64.

3.2 Biographical characteristics and descriptive statistics

The participants in the study included specialists/Sub-specialist, junior and senior registrars, medical officers, and interns. The participant’s profile was largely represented by females (65.2%), with many of the participants being within the organization for under 10 years (85,7%) and being in the same position for under 5 years (85,7%), Table 3.

Table 3. Descriptive profile of the clinical staff participating in the study, including scores of the MIB and AWS

	Variables	N (n total =73)	%
Gender	Female	45	65,2
	Male	23	33,3
	Non-Binary	1	1,4
Time in Organisation	0-6 months	8	11,4
	7-11 months	12	17,1
	1-2 yrs	12	17,1
	3-5 yrs	15	21,4
	6-10 yrs	13	18,6
	11-15 yrs	2	2,9
	10-20 yrs	4	5,7
	21+ yrs	4	5,7
Time in Position	0-6 months	13	18,6
	7-11 months	12	17,1
	1-2 yrs	17	24,3
	3-5 yrs	18	25,7
	6-10 yrs	3	4,3
	11-15 yrs	1	1,4
	10-20 yrs	5	7,1
	21+ yrs	1	1,4

3.3 Prevalence of Burnout among burnout amongst clinicians within the obstetrics and gynaecology department

Overall, there is a high prevalence of burnout syndrome among the participants in the study (Table 4 and Table 5). 80.8 % of the participants reported moderate to high levels of EE, and 69.9% reported moderate to high levels of DP (Table 4). Even though the distribution of respondents on the DP and AP scales was similar (Table 4), most of the participants reported moderate to high levels of DP. The majority of participants have moderate to high perception of PA (Table 4).

Table 4. Prevalence of reported burnout dimensions among the clinical staff (number, % respondents)

Prevalence	EE	DP	PA
High	43, 58.9%	24, 32.9%	24, 32.9%
Moderate	16, 21.9%	27, 37%	27, 37%
Low	14, 19.2%	22, 30.1%	22, 30.1%

As indicated in the scores for the MBI dimensions (Table 1), EE scores from 17 and above indicate moderate to high levels of emotional exhaustion; DP scores from 7 and above indicate moderate to high levels of depersonalization; and PA scores from 38 to below 31 indicate moderate to high levels of poor perception of personal achievement. The reported emotional exhaustion was high on average, while the DP and PA reported scores were moderate (Table 4).

Table 5. Summary of the Participant’s scores on the Maslach Burnout Toolkit

	Scale	Mean	SD	Min	Max
MBI scores	DP	9,86	6,477	0	26
	EE	27,92	11,42	3	54
	LPA	34,70	7,86	19	48

Both males and females reported high levels of emotional exhaustion, moderate levels of depersonalization and personal achievement (Table 6). Those who were in the organization for less than five years reported high levels of emotional exhaustion, moderate to high levels of depersonalization; and moderate levels of personal achievement. Those who had more than 10 years of experience expressed low levels of personal achievement (Table 6). In terms of time in position, those who were in a position for less than two years, and those above six years experienced high levels of emotional exhaustion, moderate levels of DP and AP.

Table 6: The distribution of participants responses on the MBI scale dimensions (Mean, \pm SD) according to Gender, Time in Organisation and Time in Position.

Variable	Category	EE	DP	LPA
Gender	Non-Binary	4 (0)	2 (0)	47 (0)
	Female	28 (11)	10 (6)	35 (8)
	Male	26 (11)	10 (7)	34 (9)
Time in organisation	0-6 months	28 (11)	12 (7)	35 (8)
	7-11 months	31 (10)	11 (6)	32 (7)
	1-2 yrs	32 (11)	14 (6)	32 (9)
	3-5 yrs	29 (11)	10 (6)	31 (8)
	6-10 yrs	25 (11)	7 (6)	39 (7)
	11-15 yrs	26 (18)	10 (13)	37 (5)
	10-20 yrs	22 (13)	6 (4)	39 (6)
	21+ yrs	12 (5)	2 (1)	43 (4)
	Time in position	0-6 months	31 (10)	13 (7)
7-11 months		28 (10)	9 (6)	34 (8)
1-2 yrs		32 (11)	13 (6)	33 (9)
3-5 yrs		24 (11)	6 (5)	36 (8)
6-10 yrs		28 (10)	7 (6)	33 (8)
11-15 yrs		39 (0)	19 (0)	33 (0)
10-20 yrs		19 (13)	5 (4)	41 (6)
21+ yrs		6 (0)	4 (0)	39 (0)

3.3.1 Areas of Worklife Balance

The Areas of Worklife Balance survey measures the alignment of six workplace characteristics to people’s relationship with their work; and the mismatch between people and their workplace results in reduced energy, capacity, interest in work, as well as a loss of the sense of effectiveness and achievement. The scores of the AWB survey range between 1 and 5, where 5 means high alignment or congruency and 1 means low to no alignment. The MBI toolkit tries to identify elements of the workplace that can lead to or predict burnout syndrome (Leiter and Maslach, 2004).

Many of the participants scored below or just above 3 for the Areas of Worklife Balance, suggesting moderate alignment between individual clinical practitioners and their work environment (Table 6).

In summary:

- Workload: Overall, participants experience high workloads which have a spillover into their personal lives.
- Control: Participants did not feel that they had control or autonomy on their work or could make decisions about their work. Many of the participants are quite junior and they would need to report to someone and be mentored/guided. Further, those who are in the organization longer

and longer in the position tend to feel more in control and have more autonomy over their work.

- Reward: Participants see their work as rewarding and moderately aligned with their personal goals.
- Community: Participants indicated that they feel a sense of community or part of the community in which they work. The indication was higher among those who are in the position longer and also in the organization longer.
- Fairness: The participants indicated that they did not find the work environment fair and equitable, this was indicated across board regardless of gender, time in position and time in organization. The fairness factor is not an equivalent for everyone, there is always variation.
- Values: Participants felt that there is a lot of alignment between their personal and professional values and those of their organization (values).

Table 7. Summary of the Participant’s scores on the Maslach Burnout Toolkit

	Scale	Mean	SD	Min	Max
AWS	Workload	2,54	0,66	1,0	4,2
	Control	2,76	0,82	1,00	4,25
	Reward	3,03	0,66	2,00	4,50
	Community	3,06	0,65	1,4	4,4
	Fairness	2,74	0,56	1,67	4,17
	Values	3,31	0,69	1,75	4,50

3.3.2 AWB by gender

The areas of worklife balance assessed did not vary by gender (Figure 1), statistical comparing using the independent samples t-test yielded no significant differences ($P>0.05$) by gender across the AWB scales. The only individual who identified as non-binary reported high alignment on all of the AWB scales (Figure 1).

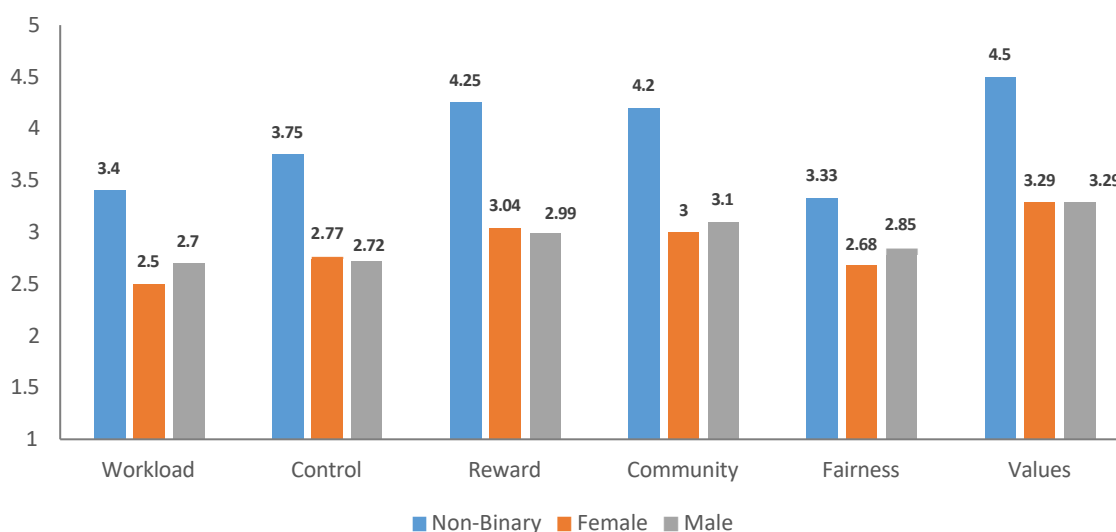


Figure 1: Distribution of Areas of Worklife Balance scores (Mean) by gender of participants

3.3.3 AWB by time in organization

Overall, there was a statistically significant difference in the AWB dimensions based on the length time in organization and in position (Table 8). The dimension fairness and Values did not differ significantly across the Time in Organisation variable (Table 8). In terms of Time in position, only control and reward varied significantly, and no difference was found among the 3 remaining dimensions (Table 8).

Table 8. ANOVA results comparing differences in AWB dimensions by time in organization and time in position of clinical practitioners.

	Time in Organisation			Time in Position		
	F	df	Sig.	F	df	Sig.
Workload	2,49	7	0,03	1,48	7	0,19
Control	2,15	7	0,05	2,14	7	0,05
Reward	3,05	7	0,01	2,06	7	0,06
Community	2,45	7	0,03	0,97	7	0,46
Fairness	1,38	7	0,23	1,25	7	0,29
Values	0,66	7	0,71	0,88	7	0,53

Overall, those who are longer in the organization tend to find more alignment across the AWB dimensions, especially showing a stronger sense of community (Figure 2). Participants who were within 0-6 months reported higher alignment with their workload, and those who are long within the organization, between 7 months to 10 years, reported being less aligned with workload, while those above 11 years in the organization most participants report becoming more aligned with their workload (Figure 2).

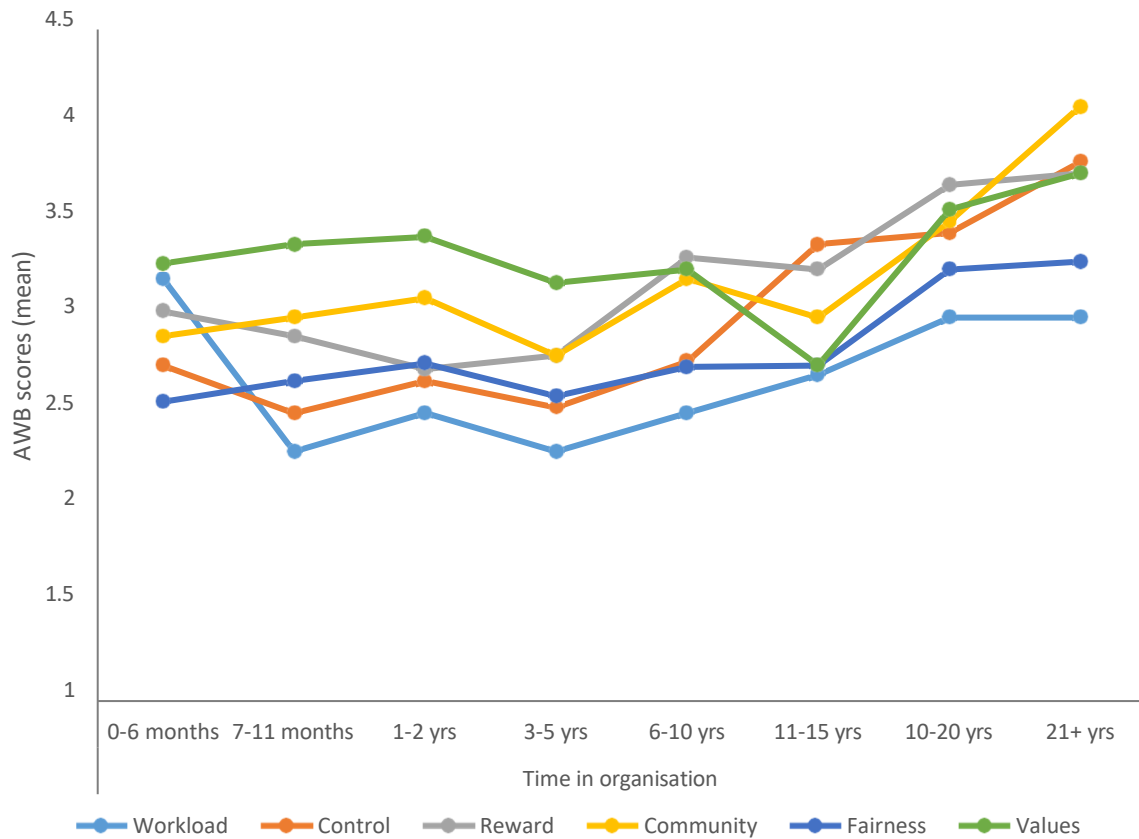


Figure 2. The distribution of the average AWS scores by Time in Organisation

3.3.4 AWS by Time in Position

Participants who reported being in the time in the same position, showed higher alignment on all five dimensions of the AWS. Thus, the longer an individual is in a position, the higher their likelihood of showing alignment with their workplace characteristics. Between 6 months and 5 years, participants reported less alignment on all AWS dimensions.

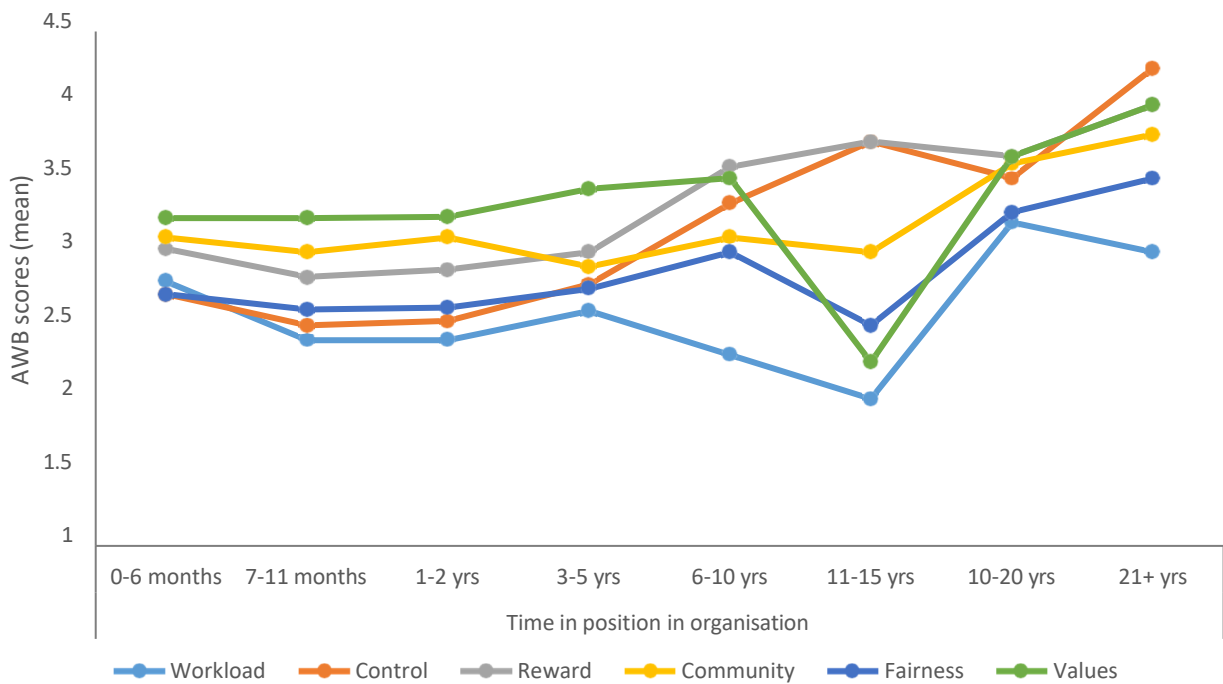


Figure 3. Distribution of the average AWS scores by Time in Position

3.4 Factors contributing to burnout amongst clinicians within the obstetrics and gynaecology department.

During the comparison of the MBI and AWS scores, the Personal Achievement scale did not vary among the participants based on gender, time in organization and time in position. Therefore, this dimension was excluded from further analyses. A multiple linear regression was conducted to ascertain the Areas of Worklife dimensions can predict the likelihood of burnout syndrome expressed as EE and DP.

3.4.1 Regression results - influence of worklife dimensions on Burnout syndrome

The regression model with the predictors workload, control, reward, community, fairness and values explained 40.5% variation in Emotional Exhaustion (EE) (adjusted $R^2 = 0.405$). The regression model was significant and indicates that the selected group of predictor variables reliably predict the variation in EE ($F_{(6, 72)} = 9.179$ $P < 0.001$). Similarly, the predictors entered into the model explained 22.2% of the variation in the Depersonalization (adjusted $R^2 = 0.222$), with all the predictors significantly contributing to explaining the variation in DP ($F_{(6,72)} = 4.24$ $p < 0.001$).

3.4.2 Identifying predictors of burnout syndrome

The parameter estimates outputs from the multiple linear regression analysis shows the contributions of each predictor variable in explaining the dependent variable. This helps to ascertain the impact of each variable in predicting the variance in the dependent variable. On their own, Workload and

Fairness significantly predicted the variation in Emotional Exhaustion (Table 8). For the participants who indicated more alignment with Workload, there is 8.31 times decrease in Emotional Exhaustion. Similarly, for every increase in alignment with Workload, there is 3.30 times decrease in Depersonalisation (Table 8). Fairness contributed significantly only for EE, where participants who reported higher alignment with their workplace in terms of Fairness reporting 6.78 times decrease in emotional exhaustion (Table 8).

Table 8. Regression coefficient results for the model predicting Emotional Exhaustion (EE) and Depersonalisation.

Variables	Emotional Exhaustion				Depersonalisation			
	β	SE	t	Sig.	β	SE	t	Sig.
(Constant)	66,34	7,05	9,41	<,001	29,181	4,57	6,38	<,001
Workload	-8,31	1,77	-4,70	<,001	-3,30	1,15	-2,88	0,01
Control	-0,80	1,8	-0,44	0,66	-0,529	1,17	-0,45	0,65
Reward	-2,50	1,86	-1,34	0,19	-1,522	1,21	-1,26	0,21
Community	1,62	1,93	0,84	0,41	0,492	1,25	0,39	0,70
Fairness	-6,78	2,52	-2,70	0,01	-1,354	1,63	-0,83	0,41
Values	1,82	2,06	0,88	0,38	-0,81	1,34	-0,61	0,55

The regression analysis identified Workload alignment as a key factor in contributing to burnout syndrome with those that have a reported a higher alignment with workload, that is, workload is balanced and does not spill over into personal and social time, with manageable physical and intellectual burden of the job, reporting lower emotional exhaustion and depersonalization.

4 Discussion and Conclusions

This study aimed to ascertain the prevalence of and determine the factors that contribute to burnout syndrome among clinicians in the Obstetrics and Gynaecology Department at Tygerberg Hospital, South Africa. The profile of the participants was represented largely by females, and those who were less than 10 years within the organization and many within 5 years in their current position. Most of the clinicians who responded to the study reported moderate to high levels of Emotional Exhaustion, Depersonalisation and Low Personal Achievement, which are proxies for burnout syndrome. The prevalence of emotional Burnout was 80.8%, Depersonalization and Low Personal Achievement at 69.9% respectively. Workload was found to be a significant factor predicting the likelihood of burnout syndrome among the cohort of participants, and is a significant factor recognized globally as a major cause of burnout syndrome (Peltzer et al. 2003; Naidoo et al. 2020; Konlan et al. 2022). Although some previous studies have reported association of burnout with gender, reporting higher prevalence for

females (Shahi et al. 2022; West et al. 2018), there was no evidence for this in the current study. The lack of evidence could be attributed to the smaller sample size shown here. The findings also show that prevalence of burnout is lower in those who have been on the organisation and in their role for a longer period. Shahi and colleagues (2022) report similar results but suggest that this could be attributed to the fact that younger doctors change roles or leave the profession early due to not coping with workload; hence the lower number of senior workers who also allocate more work to junior doctors. The findings of this study are in support of previous studies that have also found a link between perception of worklife areas and development or prevalence of burnout (Brom et al. 2015).

Regarding responses to aspects of the areas of worklife, the participants in the study gave varying responses. In terms of the “control” aspect, the sample population in this study comprised largely of young doctors who were in their internship or rotation and would have needed to have a mentor/supervisor or reported to someone more senior, and thus would feel less in control or have autonomy over decision that someone senior (consultants and registrars) or who has been in the role longer. The participants’ response regarding their perception of rewards appears to have been interpreted differently. The dimension refers to alignment with personal goals (Maslach, 2001); however, the participants perceived this as referring to rewarding profession and not regarding financial incentives. They look at it as a motivation for choosing the profession, and them finding their job rewarding. A review of this scale items should be conducted to ensure that participants know what is referred to by “reward”. The results show that the sense of community is critical to reducing burnout. The results of this study show that those who were longer in the role and longer in the organisation felt a strong sense of alignment with the community or feel part of the community in which they work. This was also found in other research, suggesting that feeling safe within a community can reduce aspects of burnout (Naidoo et al 2020). In terms of fairness, although participants did not find the work fair and equitable, thus not aligned, this can be attributed to the fact that most of the participants were likely younger and had less time in the organisation. Moreover, perceptions of fairness are context specific, that this interpretation could also consider aspects of the context in which the perception of fairness is viewed. For the “Values” dimension, the participants found significant alignment, and this could come from choosing the profession and what the profession represents.

Emotional exhaustion (EE) is considered the central quality and most obvious manifestation of the burnout syndrome (Taris et al., 2005). Workers may pass through different 'flight paths,' with a prominent one starting with high levels of depersonalization to cope with job stresses (Maslach et al. 2001; Maslach and Leiter 1999). Thus, depersonalisation can initially be a coping strategy in which to reduce the engagement and involvement with stressors. Excessive detachment, coupled with little

concern, can lead staff to respond negatively to clients, which can have severe negative consequences on patient outcomes within healthcare settings (Payne et al. 2020). Persistent depersonalization and cynicism towards the job and clients diminish workers' feelings of self-efficacy and achievement, according to Leiter and Maslach (1988), creating a cascade effect from high EE to high depersonalization (DP) and, in turn, low personal accomplishment (PA).

4.1 Workload and long hours predict onset and prevalence of burnout.

Several studies have provided evidence for the impact of long hours of work and workload on the development of burnout syndrome. In their study, Shahi and colleagues (2022) show that the workload demands, and long hours (over 80h per week) were more excessive in certain specialities such as surgery, obstetrics and gynaecology and anaesthesiology, and that there is evidence to show that long hours were associated with increased burnout risk. Further, in their study, Naidoo and colleagues (2020) found that additional to increased burnout risk, a consequence was the development of anxiety and depression. The current study did not assess the workload demands of the sample population of doctors, but instead looked at the areas of worklife workload dimension's impact on burnout development. Workload alone predicted increased risk of burnout, thus, supporting evidence from previous studies (Peltzer et al. 2003; Rossouw et al. 2013; Stodel and Stewart-Smith 2011). Davenport and colleagues (2008) further point out to the impacts of workload on physical health as well as risks to work-life balance.

We found that high workload was the biggest predictor of burnout development, with 80% of the participants reporting high levels of emotional exhaustion, depersonalisation and perceptions of low personal achievement. This finding is similar to evidence from another research. In their study, Kouvonen and colleagues (2015) show that high workload is associated with emotional exhaustions, especially among the younger workers. The consequence of high work demand that exceeds the time requirements and human ability, this results in emotional exhaustion, and which can cascade to the development of other aspects of burnout syndrome such low job satisfaction and depersonalisation. These last two aspects result in poor delivery of services and poor outcomes, which is dangerous within the healthcare settings.

4.2 Increased prevalence of burnout at the start of the career

The results of the study support the view that job-burnout prevalence is higher at the beginning of the job experience in obstetrics and gynaecology. A large part of the participants was within their first five years in their position in the organization and were also under 10 years in the organization. In addition,

previous studies have indicated that MBI shows that burnout level declines with working age (Maslach et al. 2001; Naidoo et al 2020). So more mature and established workers will experience less burnout syndrome. In the five dimensions of the AWS, the longer an individual is in a position, the higher their likelihood of showing alignment with their workplace characteristics. Between 6 months and 5 years, participants reported less alignment on all AWS dimensions. This is likely because most of the participants were likely younger doing their rotations. In the sampling approach, demographic data was limited only to gender, time in position and time in organisation. Based on evidence in other research studies, there could be additional demographic and socio-economic factors that contribute or help define prevalence and onset of burnout syndrome that were not measured in the current study (Stodel and Stewart-Smith, 2011; Rossouw et al. 2013).

The occupational rank of healthcare practitioners was found to be linked to burnout risk in several studies (Maslach et al. 2001; West et al. 2018), suggesting that younger doctors are at risk (Naidoo et al. 2020). To further support the findings on the prevalence of burnout in younger doctors at the onset of their careers, Konlan and colleagues (2022) found that doctors with less than five years working experience showed significantly high risk of burnout. Their study also indicated that there was a mismatch in terms of allocated hours to academic development for medical students, which hints at the fact that onset of burnout may happen even earlier. In their study, Rossouw and colleagues (2013) showed higher prevalence of depersonalisation and low levels of personal achievement among interns, which may impact their job satisfaction and can contribute to development of feelings of intention to leave (Stodel and Stewart-Smith, 2011). The multiple challenging factors they face within the hospital settings and lack of mentorship and supervision can be the major contributor, exacerbated by the high workload and long working hours. Moreover, they are not prepared for the occupational challenges faced within the healthcare system such as lack of resources and equipment (Engelbrecht et al. 2008; Jensen et al. 2022), short staffing and demands on time as well as dealing with high patient numbers (Stodel and Stewart-Smith, 2011; Amofo et al. 2015; Patel et al. 2018; Naidoo et al. 2020; Konlan et al. 2022; Jensen et al. 2022). The job can bring high pressure and high demand with very little control and this can intensify the stressors on the individual. This allows for someone with very little experience in the profession to fail.

4.3 Impact of workload on the retention of young doctors

The South African healthcare system grapples with burnout-induced staff shortages (Payne et al. 2020), with systemic issues affecting professionals at various career stages, necessitating comprehensive interventions to address workplace challenges and retain healthcare talent. There has been an increased flight of skills in the public health sector, with young doctors and nurses leaving the

sector for greener pastures internationally or resorting to the private sector or even changes careers (Stodel and Stewart-Smith, 2011; Naidoo et al. 2020; Konlan et al. 2022). Junior doctors work long hours, with no sufficient time for recovery and rest (Stodel and Stewart-Smith, 2011), and in reality this also applies to nurses and other support functions (Coetzee and Kluyt, 2020; Naidoo et al. 2020). In their study on doctors in the Western Cape, South Africa, Stodel and Stewart-Smith (2011) found extremely high levels of emotional exhaustion, depersonalisation and low personal achievement among the young doctors, exceeding global norms (Maslach et al. 2001), and many had shown the intention to leave (similar results reported by Coetzee and Kluyt, 2020; Naidoo et al. 2020; Konlan et al. 2022). This is a very worrying outcome since in a decade after this study, more research uncovered even more extensive prevalence of burnout and its negative consequences (Naidoo et al. 2020; Konlan et al. 2022).

Shahi et al. (2022) emphasized the preventability of burnout among trainee resident doctors/registrar, attributing it to high early-career workloads, affecting learning and knowledge absorption. The study highlights the risk of clinicians leaving the profession within the first five years, impacting the quality and retention of future registrars. High workload in the beginning of the career takes away from the learning, especially if there is very little time allocated to academics and research. What is adding to the challenges faced by junior doctors is the inability to juggle practical aspect and research needs for them to do their work well; they likely do not have sufficient support and they end up feeling unaccomplished as their performance becomes affected or they do not feel confident to treat patients in some contexts. If the absorption of knowledge does not happen enough at this stage as there is a significant amount to juggle between practice and theory, the likelihood of young clinicians not continuing in the profession becomes high. The future registrars are groomed within this early career phase, however, if insufficient learning is happening, then the quality of registrars and the retention of future registrars will decline as many are likely to leave the profession within the first 5 years (Konlan et al. 2022; Shahi et al. 2022; Stodel and Stewart-Smith, 2011;). There are actions that can be taken to prevent onset of or mitigate burnout, and these boil down to the organizational and human resources practice i.e. recruitment, improved management, support, mentorship, improved working conditions and empathetic administration (Konlan et al. 2022).

Despite burnout tendencies, many healthcare professionals feel a strong commitment to their patients and often prioritising the patient's needs over their own emotional well-being. However, even with this dedication, it may allow for medical errors to arise (Shahi et al. 2022; Blaauw et al. 2013).

4.4 Conclusions

In the last decade, extensive research has shown the prevalence and repercussions of burnout among healthcare workers, with a particular emphasis in developing countries (Naidoo et al., 2020; Konlan et al., 2022). A multitude of factors, such as staff shortages, working conditions, high workload, inadequate equipment, long working hours, and frustration within the public healthcare system, have been consistently identified in previous studies as contributors to burnout (Rossouw et al. 2013; Stodel and Stewart-Smith, 2011; Patel et al. 2018). Junior doctors, given their initial limited capacity to navigate these challenges, may be especially susceptible.

The South African healthcare system has reported a notably higher prevalence of burnout (Naidoo et al., 2020), indicating a significant vulnerability among junior doctors. To address this vulnerability, targeted programs should prioritize young doctors, offering enhanced clinical supervision, mentorship, and coping skills. The work environment, including hospital load and working hours, intertwines with socio-demographic factors, impacting burnout and overall well-being (Naidoo et al. 2020). Therefore, human resources practices need to come into play to ensure there is adequate support for healthcare workers, especially in public hospitals. The higher risks of burnout among the specialists also needs specific attention, and sufficient human resources support is needed to create an enabling and supportive environment for healthcare workers.

4.5 Limitations of the study

- **Age and Position Variables:** The study encountered limitations concerning the variables of age and position within the professional hierarchy. A more detailed exploration of age-related factors could have provided a nuanced understanding of burnout syndrome dynamics. Additionally, insight into the various positions within the clinical hierarchy, including specialists, sub-specialists, fellow specialists, junior and senior registrars, medical officers, and interns, could have contributed valuable perspectives.
- **Participant Discretion:** An inherent limitation arose from participants' reluctance to disclose their specific positions within the healthcare hierarchy. This discretion impacted the study's ability to fully delineate burnout prevalence and syndrome characteristics among different clinical professionals. Greater transparency in participant reporting would have enriched the findings with more detailed insights.

4.6 Recommendation

The literature review and outcomes of the study highlights that burnout is prevalent and a persistent problem with wide ranging consequences for healthcare workers' health and for patients. The following a recommendation to be taken by organisational managers and administrators to support healthcare workers, especially Obstetrics and Gynaecology clinicians:

- **Addressing Professional Obstetrics and Gynaecology Workload:** The foremost stressor identified by Obstetrics and Gynaecology clinicians is workload. Addressing work overload is crucial, and a shortage of professional nurses might be a contributing factor.
- **Determining Future Training Needs:** Proactively plan by determining the specific training needs of facilities and districts. This approach ensures effective execution of work and contributes to better overall planning.
- **Time Off and Leave Policies:** Implement sufficient leave policies to allow healthcare professionals the necessary time off for rejuvenation and well-being.
- **Allocated Time for Study for young doctors:** Dedicate specific time for learning theories and conducting research on prevailing conditions. This focused approach enhances the professional development of healthcare workers.
- **Mentorship Programs:** Establish mentorship programs, particularly for junior doctors. Pairing them with experienced seniors can provide valuable support and guidance, aiding in their professional growth. Moreover, helping them to navigate this challenging career path can help to retain them within the system and enable them to enhance their academic skills.
- **Emotional Stress Mitigation:** Recognize and address the impact of emotional stress on burnout among junior doctors. Implement measures such as mentorship programs, peer support groups, debriefing sessions, and comprehensive new employee orientation programs to mitigate emotional stress and enhance well-being.

5 References

- Al-Ma'mari N.O., Naimi A.I., Tulandi T. Prevalence and predictors of burnout among obstetrics and gynecology residents in Canada. *Gynecol. Surg.* 2016;13(4):323–327, doi: 10.1007/s10397-016-0955-3.
- Amofo E., Hanbali N., Patel A., Singh P. What are the significant factors associated with burnout in doctors? *Occupational Medicine* 2015;65(2):117–21, doi.org/10.1093/occmed/kqu144 PMID:25324485
- Balie G.M., Branch S. J., Lombaard H.A.d.T. Burnout among obstetrics and gynaecology registrars in teaching hospitals of the University of the Witwatersrand Medical School. *S. Afr. J. Obstet. Gynaecol.* 2019;25(3):75–78, doi: 10.1796/SAJOG. 2019.v25i3.1490.
- Becker J.L., Milad M.P., Klock S.C. Burnout, depression, and career satisfaction: scross-sectional study of obstetrics and gynecology residents. *Am J Obstet Gynecol.* 2006;195(5):1444-9, doi: 10.1016/j.ajog.2006.06.075.
- Blaauw D., Ditlopo P., Maseko F., Chirwa M., Mwisongo A., Bidwell P., Thomas S., Normand C. Comparing the job satisfaction and intention to leave of different categories of health workers in Tanzania, Malawi, and South Africa. *Glob. Health Action* 2013;6:19287.
- Brom S., Buruck G., Horváth I., Richter P., Leiter MP. Areas of worklife as predictors of occupational health - a validation study in two German samples. *Burn Res.* 2015;2(2,3):60-70. doi.org/10.1016/j.burn.2015.05.001.
- Circenis K. and Millere I. Compassion fatigue, burnout and contributory factors among nurses in Latvia. *Procedia - Soc. Behav. Sci.* 2011;30:2042–2046, doi: 10.1016/j.sbspro.2011.10.395.
- Coetzee J.F. and Kluys H. Burnout and areas of work-life among anaesthetists in South Africa. Part 1: Burnout. *SAJAA* 2020;26(2):73-82, doi.org/10.36303/SAJAA.2020.26.2.2358.
- Davenport D.L., Henderson W.G., Hogan S., Mentzer R.M., Zwischenberger J.B. Participants in the working conditions of surgery residents and quality of care study. Surgery resident working conditions and job satisfaction, *Surgery* 2008;144(2):332–338.
- Della Valle E., De Pascale G., Cuccaro A., Di Mare M., Padovano L., Carbone U., Farinano E. Burnout: rising interest phenomenon in stressful workplace. *Ann. Ig.* 2006;18(2):171–177.
- Dubale B.W., Friedman L.E., Chemali Z., Denninger J.W., Mehta D.H., Alem A., et al. Systematic review of burnout among healthcare providers in sub-Saharan Africa. *BMC Public Health* 2019; 19(1), doi.org/10.1186/s12889-019-7566-7 PMID: 31510975
- Engelbrecht M.C., Bester C.L., Van Den Berg H., Van Rensburg H.C.J. A study of predictors and levels of burnout: The case of professional nurses in primary healthcare facilities in the Free State. *S Afr J Econ* 2008,72:15-27.

- Fentie E.T., Wami S.D., Kabito G.G. Prevalence of burnout syndrome and associated factors among healthcare workers at public hospitals in Addis Ababa, Ethiopia: Results from a cross-sectional study. *Int J Mental Health* 2021;50(4):368-380, doi: 10.1080/00207411.2021.1946904
- Felton J.S. Burnout as a clinical entity – its importance in healthcare workers. *Occup Med* 1998;48:237-250.
- Freudenberger H.J. The staff burnout syndrome in alternative institutions. *Psychotherapy: Theory, Research and Practice* 1975;12:72-83.
- Halbesleben JRB. Sources of social support and burnout: A meta-analytic test of the conservation of resources model. *J App Psychol* 2006;96(1):182, doi.org/10.1037/0021-9010.91.5.1134
- He S., Chen Y., Zhan J., Wu J., Opler M. Job Burnout, Mood State, and Cardiovascular Variable Changes of Doctors and Nurses in a Children’s Hospital in China. *ISRN Nurs.* 2014;9:386719, doi.org/10.1155/2014/386719
- Iorga M., Socolov V., Muraru D., Dirtu C., Soponaru C., Ilea C., Socolov D-G. Factors Influencing Burnout Syndrome in Obstetrics and Gynecology Physicians. *Biomed Res. Int.* 2017;9318534, doi: 10.1155/2017/9318534.
- Jensen M.T. Are test-based policies in the schools associated with burnout and bullying? A study of direct and indirect associations with pupil-teacher ratio as a moderator. *Teaching and Teacher Education* 2022;113:1-10, doi.org/10.1016/j.tate.2022.103670
- Konlan K.D., Asampong E., Dako-Gyeke P., Glozah F.N. Burnout syndrome among healthcare workers during COVID-19 Pandemic in Accra, Ghana. *PLoS One* 2022;17(6):e0268404. doi.org/10.1371/journal.pone.0268404
- Kouvonen, A., Toppinen-Tanner, S., Kivisto, M., Huuhtanen, P., & Kalimo, R. Job characteristics and burnout among aging professionals in information and communications technology. *Psychological Reports* 2005;97(2):505–514.
- Lastovkova A., Carder M., Rasmussen H.M., Sjoberg L., De Groene G.J., Sauni R., et al. Burnout syndrome as an occupational disease in the European Union: an exploratory study. *Ind. Health* 2018;56(2):160-165, doi: 10/indhealth.2017-0132.
- Lee S.J., Choi Y.J., Chae H. The effects of personality traits on academic burnout in Korean medical students. *Integr. Med. Res.* 2017;6(2):207-213, doi: 10.1016/j.imr.2017.03.005.
- Leiter M.P. and Maslach C. The impact of interpersonal environment on burnout and organizational commitment. *Journal of Organizational Behavior* 1988;9(4):297-308.
- Leiter M. and Maslach C. Six areas of worklife: A model of the organizational context of burnout. *Journal of Health and Human Services Administration* 1999;21(4):472-89.
- Leiter M.P. and Maslach C. Areas of worklife: A structured approach to organizational predictors of job burnout. *Research in Occupational Stress and Well Being* 2004;3:91-134

- Lourel M. and Gueguen N. A meta-analysis of job burnout using the MBI scale. *Encephale*. 2007;33(6):947–953, doi: 10.1016/j.encep.2006.10.001.
- Maslach, C. Burned-out. *Human Relations* 1976;9(5):16-22.
- Maslach C., Schaufeli W.B., Leiter M.P. Job burnout. *Annual Review of Psychology* 2001;52: 397–422, doi.org/10.1146/annurev.psych.52.1.397
- Maslach C. and Leiter M. Take this job and love it. *Psychology Today* 1999;32(5):50-53.
- Maslach C. and Leiter M.P. Early predictors of job burnout and engagement. *J App Psych* 2008;93(3):498-512, doi.org/10.1037/0021-9010.93.3.498.
- Naidoo T., Tomita A., Paruk S. Burnout, anxiety and depression risk in medical doctors working in KwaZulu-Natal Province, South Africa: Evidence from a multi-site study of resource- constrained government hospitals in a generalised HIV epidemic setting. *PLoS One* 2020;15(10):e0239753, doi.org/10.1371/journal.pone.0239753
- Naji L., Singh B., Shah A., Naji F., Dennis B., Kavanagh O., et al. Global prevalence of burnout among postgraduate medical trainees: a systematic review and meta-regression. *CMAJ Open* 2021;9(1):E189–E200.
- Olley B.O. A comparative study of burnout syndrome among health professionals in a Nigerian teaching hospital. *Afr J Med Sci* 2003;32:297-302.
- Parsa-Parsi R.W. The revised Declaration of Geneva: A modern-day physician’s pledge. *J Am Med Assoc* 2017;318(20):1971–1972, doi: 10.1001/jama.2017.16230.
- Patel R.S., Bachu R., Adikey A., Malik M., Shah M. Factors related to physician burnout and its consequences: A review. *Behav Sci (Basel)* 2018;8(11):98.
- Payne A., Koen L., Niehaus D.J.H., Smit I-M. Burnout and job satisfaction of nursing staff in a South African acute mental health setting. *S Afr J Psychiat.* 2020;26(0), a1454. doi.org/10.4102/sajpsychiatry.v26i0.1454
- Peltzer K., Mashego T., Mabebe M. Short Communication: Occupational stress and burnout among South African medical practitioners. *Stress and Health* 2003;19:275-280.
- Peisah C., Latif E., Wilhelm K., Williams B. Secrets to psychological success: why older doctors might have lower psychological distress and burnout than younger doctors. *Aging Ment. Health* 2009;13(2):300–307, doi: 10.1080/13607860802459831.
- Poncet M.C., Toullic P., Papazian L., Kentish-Barnes N., Timsit J.F., Pochard F., Chevret S., Schlemmer B., Azoulay E. Burnout Syndrome in Critical Care Nursing Staff. *Am J Respir Crit Care Med* 2007;175:698-704.
- Ramondetta L.M., Urbauer D., Brown A.J., Richardson G., Thaker P.H., Koenig H.G., Levenback C., Sun C. Work related stress among gynecologic oncologists. *Gynecol. Oncol.* 2011;123(2):365–369, doi: 10.1016/j.ygyno.2011.06.010.

- Rath K.S., Huffman L.B., Phillips G.S., Carpenter K.M., Fowler J.M. Burnout and associated factors among members of the Society of Gynecologic Oncology. *Am. J. Obstet. Gynecol.* 2015;213(6):824.e1–824.39, doi: 10.1016/j.ajog.2015.07.036.
- Rossouw L., Seedat S., Emsley R.A., Suliman S., Hagemester D. The prevalence of burnout and depression in medical doctors working in the Cape Town Metropolitan Municipality community healthcare clinics and district hospitals of the Provincial Government of the Western Cape: A cross-sectional study. *South African Family Practice* 2013;55(6):567–73.
- Schaufeli W.B., Enzmann D. The burnout companion to study and practice: A critical analysis. 1998. London: Taylor & Francis. Doi:10.1201/9781003062745
- Shahi S., Paudel D.R., Bhandari T.R. Burnout among resident doctors: An observational study. *Ann Med Surg (Lond)* 2022;12;76, doi: 10.1016/j.amsu.2022.103437.
- Sirsawy U., Steinberg W.J., Raubenheimer J.E. Levels of burnout among registrars and medical officers working at Bloemfontein public healthcare facilities in 2013. *South African Family Practice* 2016;58(6):a4610, doi.org/10.4102/safp.v58i6.4610
- Stodel J.M., Stewart-Smith A. The influence of burnout on skills retention of junior doctors at Red Cross War Memorial Children's Hospital: a case study. *South African Medical Journal* 2011;101(2):115-8, doi: 10.7196/samj.4431.
- Thorsen V.C., Tharp A.L.T., Meguid, T. High rates of burnout among maternal health staff at a referral hospital in Malawi: A cross-sectional study. *BMC Nurs.* 2011;10:9, doi.org/10.1186/1472-6955-10-9.
- Taris T.W., Le Blanc P.M., Schaufeli W.B. Schreurs P.J.G. Are there causal relationships between the dimensions of the Maslach Burnout Inventory? A review and two longitudinal tests. *Work & Stress* 2005;19(3):238-255, doi: 10.1080/02678370500270453
- Trufelli D.C., Bensi C.G., Garcia J.B., Narahara J.L., Abrao M.N., Diniz R.W., Da Costa Miranda V., Soares H.P., Del Giglio A. Burnout in cancer professionals: a systematic review and meta-analysis. *Eur. J. Cancer Care (Engl)*. 2008;17(6):524–531, doi: 10.1111/j.1365- 2354.2008.00927. x.
- West C.P., Dyrbye L.N., Shanafelt T.D. Physician burnout: Contributors, consequences and solutions. *Journal of Internal Medicine* 2018;283(6):516–29, <https://doi.org/10.1111/joim.12752> PMID: 29505159
- Woo T., Ho R., Tang A., Tam W. Global prevalence of burnout symptoms among nurses: A systematic review and meta-analysis. *J. Psychiatr. Res.* 2020;123:9–20, doi: 10.1016/j.jpsychires.2019.12.015.
- Ye J *et al.* Burnout among obstetricians and paediatricians: a cross-sectional study from China. *BMJ Open* 2019;9(1):e024205, doi: 10.1136/bmjopen-2018-024205.

6 Appendices

6.1 Study Approval letter



Approval Letter Progress Report

04/04/2023

Project ID: 22461

Ethics Reference No: S21/06/105

Project Title: CONTRIBUTORY FACTORS TO BURNOUT SYNDROME IN THE OBSTETRIC AND GYNECOLOGY DEPARTMENT AT TYGERBERG HOSPITAL

Dear Dr. S Ali

We refer to your request for an extension/annual renewal of ethics approval received on 23/02/2023.

The Health Research Ethics Committee reviewed and approved the annual progress report through an expedited review process.

The approval of this project is extended for a further year.

Approval Date: 16 March 2023

Expiry Date: 15 March 2024

Kindly be reminded to submit progress reports two (2) months before the expiry date.

Where to submit any documentation

Kindly note that the HREC uses an electronic ethics review management system, *Infonetica*, to manage ethics applications and the ethics review process. To submit any documentation to HREC, please click on the following link: <https://applyethics.sun.ac.za>.

Please remember to use your Project Id 22461 and ethics reference number S21/06/105 on any documents or correspondence with the HREC concerning your research protocol.

Please note that for studies involving the use of questionnaires, the final copy should be uploaded on Infonetica.

Yours sincerely,

Melody Shana
Coordinator: Health Research Ethics Committee 1

*National Health Research Ethics Council
(NHREC) Registration Number:
REC-130408-012 (HREC1)-REC-
230208-010 (HREC2)*

*Federal Wide Assurance Number: 00001372
Office of Human Research Protections (OHRP)
Institutional Review Board (IRB) Number:
IRB0005240 (HREC1)-IRB0005239 (HREC2)*

The Health Research Ethics Committee (HREC) complies with the SA National Health Act No. 61 of 2003 as it pertains to health research. The HREC abides by the ethical norms and principles for research, established by the [World Medical Association \(2013\). Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects](#); [the South African Department of Health \(2006\). Guidelines for Good Practice in the Conduct of Clinical Trials with Human Participants in South Africa \(2nd edition\)](#); [as well as the Department of Health \(2015\). Ethics in Health Research: Principles, Processes, and Structures \(2nd edition\)](#).

The Health Research Ethics Committee reviews research involving human subjects conducted or supported by the Department of Health and Human Services, or other federal departments or agencies that apply the Federal Policy for the Protection of Human Subjects to such research (United States Code of Federal Regulations Title 45 Part 46); and clinical investigations regulated by the Food and Drug Administration (FDA) of the Department of Health and Human Services.