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Burnout amongst interns in the department of Obstetrics and Gynaecology, University of Witwatersrand

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BURNOUT AMONGST INTERNS IN THE DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY, UNIVERSITY OF WITWATERSRAND

MMED RESEARCH

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DECLARATION

I, Peter Odianosene Odine declare that this research is my original work which was done unaided. It is submitted for the Degree of Master of Medicine at the University of the Witwatersrand, Johannesburg.

_____

_____ Day of _____20___in _____

DEDICATION

This research is dedicated to all those who have contributed in imparting knowledge to my life and making me a better person. Also, this work is dedicated to the loving memory of my Dad and the unflinching love of my wife.

ABSTRACT

The mental state and wellbeing of a medical trainee or intern determines his or her ability to learn and to discharge his or her responsibilities adequately and responsibly. However, Burnout as a medical condition is often not recognized or sometimes ignored or explained away.

Aim/Objective:

Therefore, the study describes the prevalence of burnout amongst interns in the Witwatersrand academic hospitals.

Method:

Hundred and twenty interns who were in their fourth month of internship in the department of Obstetrics and Gynaecology were recruited for the study through the use of convenient sampling technique. Data were collected through the use of a two-part questionnaire. The first part of the questionnaire contained questions on demographics and possible associated factors to burnout while the second part contained questions from the Manslach Burnout Inventory for medical personnel. Data were analyzed through the use of descriptive statistics, student's T-test, one way ANOVA, Pearson's correlation and Maslach burnout inventory scale.

Results:

The results showed that majority (63%) of the interns were female aged 26years (SD ±2.87) and about 48% drank one form of alcohol or the other. The median work hours was 72hours spread across 6 days in a week while about 41% had encountered intra uterine death. In addition, poor recruitment was the major stressor of interns (4.14±1.11) while personal accomplishment (32.14 ±9.00) was the highest form of burnout. A positive finding in our circuit was the fact that interns did not find administration to be insensitive to their problems however, the most frequent associated factor for the cause of burnout was inadequate manpower employed to do the job.

Conclusion:

Thus, the study concluded that accepted methods of militating against burnout include mindful communication, vacation, delegation of duties, moral support to workers, attention to the welfare of workers by health administrators and control of working hours. Therefore the study recommended that management should pay heed to recruitment of more interns in our academic Hospitals and more attention should be paid to recreation and vacation of interns.

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LIST OF ABBREVIATIONS

BO= Burnout

DP= Depersonalization

EE= Emotional exhaustion

MBI= Maslach Burnout Inventory

SAMJ= South Africa Medical Journal

PROQOL= Professional Quality of life Scale

WHO= World Health Organisation.

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CHAPTER ONE - INTRODUCTION

1.1. BACKGROUND

The mental health of practicing physicians is an area of concern worldwide. The ability of a medical trainee or intern to learn is dependent upon his mental state and wellbeing. It also determines the ability of an intern to discharge his or her responsibilities adequately and responsibly. Burnout is a new word in the medical context. It affects the quality of care provided by doctors and also contributes to the quality of life of doctors. Burnout is common in medical practice and was historically thought to be occupational hazard found in hard driving personnel[1].

Doctors are often exposed to high levels of stress in their daily activities in the hospital. Due to the nature of their jobs, they are exposed to different types of emotions, including an urge to rescue patients[2]. They often feel a sense of powerlessness and failure when a patient's illness is not halted. There is also the feeling of grief, fear of becoming sick oneself or dying; they are also faced with the pressure coming from the uncertainties in clinical practice and litigations[2]. As a result, they have the desire to separate from or to avoid patients in order to be free from these emotions[2]. Repeated exposure to these types of feelings and the distresses felt by doctors from these emotions could contribute to the high stress levels and consequently burnout encountered by doctors[2,3]. Burnout has been found to be a preventable condition if the risk factors are identified early on[3]. Modifiable factors for burnout are usually identifiable in the work place. Years of research have shown that a change in the health care workplace can lead to reduction in burnout amongst physicians and improve quality and safety of care to patients[4].

1.2. PROBLEM STATEMENT

The mental health of practicing physicians is a thing of worry globally. However, Burnout as a medical condition is often not recognized or sometimes ignored or explained away. Burnout as a

disease has only recently been classified as an occupational phenomenon by World Health Organisation[5]. More so, the associated and mitigating factors are also poorly researched. Also, few studies have been done in Africa and even fewer studies are available on interns who form the bulk of the workforce in majority of our public Hospitals.

1.3. JUSTIFICATION

The findings of this study will contribute to the body of knowledge on this important subject. The research will also get information on some of the associated causative factors and knowledge on how to reduce the negative effects of burnout. Once prevalence, associated causative factors in our environment are known, reducing the impact of the negative consequences of this phenomenon can then be pursued.

1.4.AIMS AND OBJECTIVES

The aim of this study is to describe the prevalence of burnout amongst interns in the Witwatersrand Academic Hospitals. The study also aims to find the associated factors to burnout.

Objective of the study

The objective of this study is to:

1. Determine the prevalence of burnout in interns in our circuit.
2. Determine the associated factors associated with burnout, once determined, possible solutions to burnout can then be provided.

CHAPTER TWO - LITERATURE REVIEW

2.1.BACKGROUND TO BURN OUT

The mental status of a health practitioner plays a great role in his or her ability to handle his or her duty professionally, to an acceptable degree and to give patient satisfaction with treatment. Mental health of practicing doctors is becoming topical worldwide[5,6]. Medical work involves a lot of charitable services and personal sacrifices. The pressure from these exposes those involved to a lot of hazard and stress which predisposes them to burnout [7].

Burnout as a syndrome is new to the medical world and dictionary. It was first described about five decade's ago[8]. It results from depletion of physical and or emotional strength. Exhaustion of strength comes from a constant exposure to strenuous work and frustrations arising from managing patients[1,2]. Burnout can be defined as consisting of three arms or components namely emotional exhaustion, feeling of detachment from patients (depersonalization) and a feeling of low self-esteem / low personal accomplishment/ success[1]. Emotional exhaustion is related to reduce or depleted energy levels needed to meet the demands of ones jobs or play his or her part at work effectively. Depersonalization refers to emotional distance from colleagues, patients and one's duty. It also involves callousness, viciousness, wickedness or 'I do not care attitude' to an assigned role, colleagues or patients. Depersonalization includes the feeling of being lost at work[4]. Low personal accomplishment is defined as the feeling of low self-worth, defeated goals, lack of success at aims and feeling of failure at set objectives[4].

WHO defines burnout as the feeling of vital exhaustion[5]. It is a complex syndrome that reveals the interplay between environmental stressors, an individual make up and the coping mechanism of the individual[3]. It is more related with daily chronic stress than with occasional stressful events[3]. It also relates with the inability to manage stress specifically arising from work or the work environment[9]. Burnout though encompassing emotional despair is a completely distinct entity from depression[10]. It is also seen as a different condition from compassion tiredness[11]. Depression according to the National Institute of Mental Health is a chronic condition with poor sleep, poor appetite or lack of appetite, low mood, sadness and loss of sexual pleasure[12]. Burnout differs from depression in lacking the elements of feeling hopeless and thoughts of committing suicide. It also requires interpersonal experiences in the work environment for it to develop unlike depression[11].

Compassion tiredness or fatigue on the other hand is a syndrome that develops when dealing with patients with traumatic events[11].

2.2.BURNOUT AND DOCTORS

Medical doctors are known to be hardworking, obsessive, self-motivated and comfortable when in control of the situation[13]. They are perfectionist. Perfectionists are also prone to depression and anxiety[13]. Studies have shown that doctors are at increased risk for stress related medical disorders than is obtained in the general population[14]. Feelings of poor control over one's work, dashing of expectations, and feeling of loss of meaning of life are recognized as separate or independent causes of burnout[1].

Medical internship, which is a period of apprenticeship or practical learning on the job by a medical graduate in order to secure a license and the requisite skills to practice medicine, is recognized as a period of extreme stress[15]. Stressors in this period include the relative inexperience of the new doctors, heavy workload (high patient turn over), extreme sleep deprivation and the need for on the spot decisions in very delicate and complex cases. These stressors can lead to a doctor being burnt out[15,16]. Internship can be a joyous period for some doctors, but the effect of juggling the pressure from work, family, personal life and at the same time confronting clinical experiences especially with their relative inexperience can be overwhelming if not devastating for others[9]. Erasmus in a 2012 publication considers the stress and extreme sleep deprivation of interns especially in South Africa to be Human Right Abuse [17].

Studies have reported a burnout rate of between 20-45% amongst medical doctors [6,7,15,16]. Despite interns making the major workforce of many hospitals, few researches are focused on them[15]. This may be because they occupy the lower rank of the ladder in medical practice[18].

2.3.PREVALENCE OF BURNOUT IN INTERNS

Burnout is thought to begin in doctors when they were students, with the pressure from studying bulky materials, managing time and the pressure of exams. This worsens when they become interns with the pressure of managing patients[19]. Rosenthal et al reported a higher depression rate for medical students as compared to their other colleagues in other fields[20]. This finding was corroborated in a study in Brisbane, Australia by Parr et al, with 55.9% of the interns experiencing burnout which peaked half way into the internship training[21]. This was also found to be the case in

a literature review by Ishak *et al,* who found a burnout rate of 30%-70% in first year residents with an increasing rate as the programme progressed[22].

Nematpour *et al* described a higher prevalence rate amongst interns in Iran. They found that 88% of interns interviewed had burnout. Nematpour *et al* found 44% had depersonalization, 50% had emotional exhaustion and 88% suffered from lack of personal accomplishment[23].

Castelo-Branco *et al* also found a high prevalence of burnout amongst trainees in obstetrics and gynaecology in a study done in Spain[24]. Wei-min Jin *et al* found a significant job burnout exists among Chinese medical interns in a university hospital of Shanghai, along with lower psychological health, and lower professional efficacy[12].

A study done in Malawi amongst health care workers in the maternity department showed that 72% experienced burnout on emotional exhaustion, 43% on depersonalization and 74% low personal accomplishment[25].

Local studies on burnout are few, worse still studies done on interns. A study carried out on Registrars and Medical officers at Bloemfontein public healthcare facilities showed a high prevalence of burnout: 47% suffered from emotional exhaustion, 40% showed high levels of depersonalization and 38% showed a low level of personal accomplishment[26].

Stodel found that all 22 doctors (registrars and interns) sampled at the Red Cross War Memorial Hospital, Cape Town experienced burnout on one of the three subscales of burnout namely 90% emotional exhaustion, 70% depersonalization and 50% personal accomplishment[16] .

2.4.TOOLS FOR MEASUREMENT OF BURNOUT

There are different tools for the measurement of burnout. Amongst the numerous scales, the under listed are the most frequently used;

1. Maslach Burnout Inventory: The MBI is the most popular validated/certified tool for the measurement of burnout [27]. It is a 22- item scale that measures/calculates the level of burnout by measuring Emotional exhaustion; depersonalization and low personal accomplishment[1,28] There are several questions for every single aspect of these subscales. Answers are in the form of a tally on the occurrence of symptoms on a rating scale (ranging from never, daily, few times monthly to weekly or yearly). Analyzing the data from the

MBI requires an examination of the links between subscales as continuous variables and outcomes[1]. Another way to analyze it is by classifying results separately using already known definitions of low, average, and high for each sub category/subscale. Alternatively, investigators can decide to classify results into burnout or no burnout, however, a standard definition is lacking[29]. Another way to look at burnout which is quite popular is to classify individuals as burned out if they have high scores on either the emotional exhaustion (EE) (Score of 27 or more) or Depersonalization (DP) (score of 10 or higher) subscales[30]. Also, individuals can be classified as burned out if their score on the EE scale is high alongside either a high DP score or a low score on the personal accomplishment (PA) subscale (score less than
33)[28,30].

2. Oldenburg burnout inventory: The Oldenburg burnout inventory is a 16 item enquiry on burnout and work engagement. The questions are positively and negatively coded to cover two aspects: exhaustion (physical/energy levels, thinking and thought process, and emotional stability) and divorce from work (discontentment with work objects, work content, or work as a whole) [28].
3. Quality of Life Index: the quality of life index is a 33- questions survey which measures the positive outlook, value and satisfaction with life in a variety of aspects[28].
4. Professional Quality of life Scale (PROQOL): It is a 33-item questionnaire which measures empathy satisfaction, burnout and traumatic events leading to stress[28]. Access the physician Work-Life study's single item: This tool is used to measure burnout in an occupational group. It is not a very popular tool because it's cut off scores for burnout (no symptom of burnout if individual scored 2 or less as against burnout if they score 3 or above), were not established based on validity testing[29].
5. The Copenhagen Burnout Inventory: it is a 19-item audit which has both affirmative and negatively framed questions /inquiry that envelope 3 area: personal and psychological tiredness, work related tiredness, patient- related exhaustion. There are several questions for each category and expected answers are in the form of either always, frequently, occasionally, rarely, and never/almost never or to a very high extent/level, to a high extent, somewhat, to a low extent, and to a very low extent[28,29].

2.5.FACTORS ASSOCIATED WITH BURNOUT

It is quite a difficult task to isolate the exact cause of burnout. This is so because oftentimes, Burnout is a complex and multifaceted problem[2]. Chronic exposure to workplace stress is associated with development of burnout.[8] However, not everybody exposed to chronic workplace stress will develop burnout. Other factors such as personality traits and personal circumstances may determine whom amongst those that gets constant exposure to workplace stress that will develop burnout[31]. Trufelli *et al* did a systematic review and meta-analysis, they found decreased leisure time, decreased social activities, difficulties with the patient-physician relationship, and problems with dealing with patients' families are associated causative factors for burnout in oncologists[32].

Peltzer found the greatest sources of stress amongst South African doctors arose from poor organizational and management support, poor feedback and communication, poor wage/remunerations, working extra or overtime and making important critical on the spot decisions[33]. Thorsen *et al* reported the number of children one has as an important predictor to depersonalization and personal accomplishment. The more children one has correlated to a higher burnout score on those two (2) factors i.e. the higher the number of children, the higher the probability of being burnout on the DP and PA subscales of the MBI[25]. This is made worse if one's spouse/partner was not supportive. The responsibility of caring for children and also being a dutiful partner can weigh a person down and create a huge distraction in the workplace [25].

In a study by Stodel, the authors reported that increased workload and intensity of contact with patients are all factors that can lead to Burnout and make the quality of care of patients' abysmal[16]. Sirsawy *et al* identified the female gender to be more associated with emotional exhaustion[26]. This finding was corroborated by Peltzer *et al* [33]. Amoafo *et al* also asserted that female doctors experienced more stress at work than their male colleagues. This thus increased their risk factor for developing burnout [34]. Stodel aside concurring with this finding also found out that in South Africa, female Doctors were higher in proportion amongst the Junior Doctors. He averred that more female doctors were being graduated from our medical schools in recent years[16]. Marchland *et al* studied the relationship between Age and Burnout. Their study highlighted the fact that extreme of ages in medical practice were susceptible to burnout. They averred that those between

ages 20-35 and 55 years and above are more at risk for this condition. They further suggested that programmes to reduce burnout should be targeted at these age groups[35].

These findings were also corroborated by Stodel. He found increased workload especially that which did not allow doctors to provide the needed quality of care to their patients increased burnout[16]. He also reported poor staffing /insufficient recruitment, lack of empathy from management, lack of mentors or poor mentoring and lack of appreciation or gratitude from management as other causes of burnout[16]. Similar findings were reported by Rossouw in a study carried out at the Cape Town metropolitan community health care clinics[36]. He showed increased workload, reduced vacation time, technological advancement and managerial problem as factors contributing to burnout[36].

Emotional stress was also listed as a source of stress in several studies[10, 11, 14, 16]. Studies showed that single marital status and the patients load per week especially if such work was unsupervised, lack of job satisfaction and emotional contact with patients are significant factors in the cause of burnout[37]. A study by Rath *et al* also showed a lack of family support played a role in burnout[38]. Slaten *et al* stated that abusive supervisors, inconsiderate and selfish behaviour by other physicians, high patients volume, major organizational stress, limited to scarce resources, poor salaries, flux in shifts, challenging and demanding work, unclear roles expectations, tons of paper works and administrative duties all contribute to causing burnout[11]. Chou Li *et al* found out in their study that being young, working overtime, and being engaged in a high strain job which has frequent over commitment are all variables that are associated with burnout[39]. These factors are very common with healthcare practitioners.

Job satisfaction is a variable that can affect burnout. However, different studies have reported conflicting effect of job satisfaction on burnout[31, 40]. An inverse relationship between job satisfaction and burnout was found in a study by Shanefelt in the United State of America[14]. The study looked at physicians from various specialty disciplines and compared burnout and job satisfaction with a probability-based sample of the general population. They found a difference with work-life balance and satisfaction amongst the different specialty[14]. The lowest rate of job satisfaction was amongst surgeons and obstetricians whilst the highest was amongst physicians in the paediatric specialty and dermatology. However, the highest rate of burnout in this study was amongst those with high job satisfaction[14]. The converse of this was found in a study done by

Kumar et al amongst psychiatrists in New Zealand which found a high burnout score amongst those who had the least job satisfaction[41]. This was also the finding in a study carried out by Bressi *et al* amongst Italian psychiatrists[42]. Ozyurt *et al* averred that workers who did shift work and worked over 60 hours a week were prone to burnout especially on the EE and DP scores. They also were more likely to be dissatisfied with their job[43].

2.6.MITIGATING BURNOUT

Physicians if aware of common risk factors, contributors and manifestation of Burnout in feelings and behavioral pattern including the outcome of burnout, will help them to be able to stand back, reflect and engage in self-monitoring and introspection. It will also enable them to engage their minds in coping mechanisms to ensure the safe and responsible practice of medicine[2]. There is some evidence to suggest that participation in a mindful communication programme may be associated with short term and sustained improvements in burnout amongst doctors[41]. An American study by Krasner *et al* looked at the effect of an intensive educational programme which involved an eight week intensive phase teaching on mindfulness, communication and self-awareness which was followed by a ten month maintenance phase was associated with quantum improvements in all three aspects of burnout namely emotional exhaustion, depersonalization, and personal accomplishment[44]. Based on this, one can say that; an intense stress management programme with booster sessions delivered over a longer period of time can result in longer lasting results among those facing burnout.

Castelo-Branco et al reported reduced burnout amongst obstetrics and gynaecology registrars with a supervised schedule[24]. In addition, feeling supported by the supervisor, having a positive outlook towards clinical supervision has been suggested as reasons to have a reduced burnout score especially for depersonalisation[45]. Stodel showed that increasing recruitment, improving management planning and support alongside mentorship were the three most important factors for reducing this phenomenon amongst doctors at the Red Cross War Memorial Hospital in Cape Town[16]. Niranja *et al* suggested improved supportive academic atmosphere, extracurricular activities, support groups, relaxation training, time management, ensuring fair workload and reasonable working hours with remodeling of attitudes of authorities as factors to reduce burnout amongst trainees[46]. Meier suggests that strong thoughts and negative feelings are not uncommon in health professionals who care for very sick patients; the way out of these emotions is to have

regular reflective sessions on the care of such patients and the effects of emotions aroused by their care discussed[2]. Meier also averred that having a constant heartfelt conversation with colleagues on the impact of negative emotions and their consequences can help dampen the onset of Burnout. This can help practicing physicians to confront their feelings and provide medical care[2].

On the other hand, Christian Yiu *et al* reported spouse/partner support, family support, social support from colleagues and seniors and exercise are factors reducing stress and burnout amongst doctors in Hong Kong[47]. In addition, focusing on rest, recovery and social support are important factors that have been advocated to be focused on to be able to reduce the effect of burnout[39]. In the research by Stodel, he found out that 28% of interviewees recommended that revising the shift and leave system will go a long way to mitigate the effects of burnout[16]. Up to 19% of those he interviewed were of the opinion that increasing manpower will go a long way in cushioning the devastating effects of burnout. Cohn *et al* on the other hand pointed out in their research that 'managed care decrees that patients visits are to be brief but with higher demands for documentation', he averred that both of these factors makes the free time to be spent with patients/clients shorter[48]. Also, he claims that these two factors contribute to diminished quality time spent with Family and for recreation.[48] He further states that Time management tools and ability to organize time can help take care of daily stress[48]. Lyckholm stated that delegation of duty is an integral part of stress and Burnout reduction. Delegation of duty does not only make time available to the physician but also helps to boost and certify the skills and contributions of other group members[49]. Alongside delegation, the author also advised medical practitioners to adopt a written plan for patients. The study claims that making out a written plan for one's patients will ultimately make more time to be available to the physician. This freed up time to see patients will lead to satisfaction to both parties (patient and physician) [49]. Sirwawy encouraged the development of mechanisms to retain experienced doctors in a system. This is in a view to providing mentorship to younger doctors. Sirwawy also averred that destigmatization of both stress and depression will lead to a reduction in Burnout[26]. In addition to the above, Cohn *et al* claimed in their publication that the following under listed factors can aid with the reduction of stress and burnout;

1. Making out time frequently to look back, reminisce and have casual talks about stress related issues.

2. Taking time off work and the working environment and setting up a special date where the topic of discussion will center on patients and the emotional reactions to patients' issues.
3. Special events/ occasions should be organized to celebrate progresses that are made at work.
4. There should be regular medical review meetings. At these audit meetings, conflicts should be resolved and all problems should be tabled for discourse /discussions.
5. Efforts should be made to afford the Personnel of a medical practice the chance / opportunities to attend conferences and meetings outside their workplace and preferably in other regions/ provinces from where they work.
6. Special sessions should be held where difficult or bad news is delivered, hard psychological problems are confronted and managed. Background cultural factors that make patient care difficult are made manifest (unraveled) and understood.
7. Those who come out to share a workplace stressful event should be given special consideration and emphasis should be placed on their healing process[48].

2.7. EFFECTS OF BURNOUT

Suicidal ideation, substance abuse and depression are reported effects of burnout[24]. Stodel found a high rate of workers turn over with the attendant loss of training cost, willingness to migrate to a foreign land, absenteeism from duty, reduced productivity, low morale and increased psychiatric morbidity as negative effects of burnout[16]. These findings were also supported by the study carried out by Rajan *et al* amongst emergency department doctors[50]. Physical withdrawal from colleagues, coming to work late and leaving early are also reported outcomes of burnout[21] Burnout among doctors can also lead to self-reported below optimal patient care[19] and also to medical negligence and errors[32]. In addition, exposure to chronic stressors aside leading to burnout can also lead to marital dysfunction, suicidal ideation, premature retirement, and alcohol and drug addictions[39].

CHAPTER THREE - METHODOLOGY

3.1. STUDY DESIGN

This was a descriptive cross sectional study. A convenient sampling technique was employed. All interns received emails with a link to the questionnaire and were asked to answer and to return same with the highest level of confidentiality. To ensure anonymity, an anonymous online survey tool was used.

3.2. STUDY SETTING

The study was carried out amongst interns who were rotating through the University of Witwatersrand Department of Obstetrics and Gynaecology. Interns are distributed amongst 4 hospitals approved for internship under the university, these are; Helen Joseph Hospital (HJH), Rahima Moosa Mother and Child Hospital (RMMCH), Chris Hani Baragwanath Academic Hospital (CHBAH) and Charlotte Maxeke Johannesburg Academic Hospital (CMJAH).

3.3. STUDY POPULATION

All interns (120) doing internship between August 2018 and April 2019 as long as they were in their fourth month of internship in the department of Obstetrics and Gynaecology were recruited. Questionnaires were distributed amongst two sets of interns; the first group were those doing internship from August to December 2018, whilst the second sets were those doing internship in the department from January to April 2019. There was no need for control group as a control group was not applicable in this study.

3.4. DATA COLLECTION

Data was collected using a two-part questionnaire. The first part of the questionnaire contained questions on demographics and possible associated factors to burnout. The second part contained questions from the Manslach Burnout Inventory for medical personnel[10]. It is the most commonly used validated tool for burnout studies. Permission to use this tool was obtained from the Authors.

3.5. DATA ANALYSIS

Data analysis was done with IBM SPSS 25® statistics software. Descriptive statistics of frequency and percentage was used to summarize categorical data. For continuous data, depending on the

normality of the data, mean and standard deviation was used to summarize the normally distributed continuous data and median and interquartile range was used to summarize skewed data.

A scale of 1 to 5, with 5 being worse stressor was used to score factors causing stress at work.

The measure of significant difference between means was analyzed using Student's T- test and one way ANOVA test was used for categories with two and three groups respectively. Correlations between normally distributed data was analyzed using the Pearson's correlation. For all the inferential statistics, level of significance, p-value was set at < 0.05.

The prevalence of burnout was analyzed using the Maslach burnout inventory scale as elucidated by Maslach *et al*[1].

The degree of burnout is as stated in Table 3.1. A high degree of burnout is defined in high scores for EE subscale (≥27) and DP subscale (≥13) and low scores for PA subscale (≥31) following Sirsawy et al., 2016[51]

Table 3.1: Cut-off points for the three dimensions of burnout

Degree of burnout	EE	DP	PA
High	≥27	≥13	≤31
Moderate	17-26	7-12	32-38
Low	0-16	0	≥39

3.6. ETHICS

Permission to conduct the study was obtained from the University of Witwatersrand's Human Research and Ethics Committee, Clearance Number: M180551

No form of identification of subjects was used. An online anonymous survey tool was used for the study.

The designated representatives of the Chief Executive Officer of the involved hospitals were approached for permission to conduct the study and their permissions obtained. The study was also registered on the National Department of Health Research Database with reference number GP 201809 024.

CHAPTER FOUR - RESULTS

Demographics of the respondents

One hundred and twenty questionnaires were distributed to serving interns in the three academic hospitals. A total of 75 of them completed the questionnaires correctly. This made our response rate to be 62.5%.

Table 4.1 shows the demographics of the respondents. As shown majority (63%) of the interns were female aged 26years (SD ±2.87). Majority (88%) of the respondents were nonsmokers while about 48% drank one form of alcohol or the other. Respectively 45% and 35% of the interns were single or in a stable relationship respectively and majority (88%) had no children.

Table 4.1: Demographics of the respondents

Demographics (N=75)	**N (%/IGR)**
Gender, n (%)	
Male	28 (37)
Female	47 (63)
Age, Mean (SD) in years	26.00 (3)
Hospital where the respondents work (%)	
Charlotte Maxeke Johannesburg Academic Hospital	24 (32)
Chris Hani Baragwanath Academic Hospital	33 (44)
Rahima Moosa Mother and Child Hospital	18 (24)
Smokers (%) Yes	9 (12)
No	66 (88)
Smoke, Median (IQR) / sticks	5(4-5)
Alcohol (%) Yes	36 (48)
No	39 (52)
Alcohol, Median (IQR) / units	3(2-6)
Relationship status (%)	
Single	34 (45)
Stable relationship	26 (35)
Married	15 (20)
Pre-medicine degree (%) Yes	17 (23)

No	58(77)
Children (%)	
Yes	9(12)
No	66(88)
Number of children, n(%)	
One	4(44)
Two	4(44)
Unspecified	1(11)

Table 4.2 shows the possible personal and medical factors associated with burnout among interns. The median work hours was 72 hours spread across 6 days in a week. About 21% have had some negative impacting events in their personal life, whilst 89% did not suffer the loss of a close person. Respectively 88% and 92% of the respondents have not suffered any medical condition and have no psychological conditions**.**

Table 4.2: Personal and medical factors

Personal and Medical Factors	**Frequency (%/IGR)**
How many hours per week do you work, Median (IGR)	72 (60-80)
How calls per month do you work, Median (IGR)	6(5-6)
How many weekends call per month do you work, Median (IGR)	2(2-3)
Have you suffered from the loss of any close relative that affected you deeply	(%)
Yes	8(11)
No	67(89)
Have you recently experienced any loss or negative impacting event in your personal life	(%)
Yes	16(21)
No	59(79)
Do you suffer any chronic medical condition in need of regular follow up and medication	(%)
Yes	9(12)
No	66(88)

Do you have any psychological condition needing regular follow up	(%)
Yes	6(8)
No	69(92)

Table 4.3 shows that 21% of the interns have experienced a maternal death while 41% have encountered an intra uterine death, while only about 24% and 29% had faced neonatal death and babies born in poor conditions respectively.

Table 4.3: Adverse conditions

Maternal death (N=75)	**N**	**%**
Yes	16	21
No	59	79
Intra uterine death		
Yes	31	41
No	44	59
Neonatal death		
Yes	18	24
No	57	76
Baby born in poor condition		
Yes	22	29
No	53	71
Gynaecological patient dying		
Yes	20	27
No	55	73
Maternal near miss		
Yes	21	28
No	54	72

Table 4.4 shows that inadequate manpower in the hospitals was the major stressor of interns (4.14 ± 1.11) while perceived poor sleep (3.70 ±1.10) and too frequent calls per month (3.67 ± 1.11) were the 4th and 6th stressors of interns respectively. Furthermore, the least stressors of interns were hostile cash flow problem (12th) and hostile senior colleagues (11th).

Table 4.4: Stressors

Stressors (N=57)	Mean	S.D	Rank
Not enough people employed to do the job	4.14	1.11	1st
Not enough time for recreational activities	4.04	1.15	2nd
Not enough time for leave and vacation	3.74	1.25	3rd
Perceived poor sleep	3.70	1.10	4th
Too frequent calls per month	3.67	1.11	5th
Administration not sensitive to plights of interns	3.60	1.18	6th
Work not appreciated by colleagues	3.33	1.17	7th
Struggle to balance family life and work	3.26	1.26	8th
Administration not responsive to personal problems	3.14	1.20	9th
Not enough supervision from senior colleagues	2.88	1.20	10th
Hostile senior colleagues	2.81	1.32	11th
Cash flow problem	1.95	0.90	12th

Table 4.5 showed that personal accomplishment (32.14 ±9.00) was the highest form of burnout while depersonalization was the least form of burnout (12.69 ± 7.58).

Table 4.5: Burnout

Burnout	Mean	SD
Personal accomplishment	32.14	9
Emotional exhaustion	29.1	12.21
Depersonalization	12.69	7.58

Figure 4.1 shows the level of personal accomplishment. An average (51%) intern had low accomplishment based on the classification in table 3.1 while about 32.7% experienced moderate personal accomplishment. Also, figure 4.2 showed that majority (65.3%) of the interns had high level of depersonalization while about 20.4% of the interns were moderately depersonalized. Furthermore, emotional exhaustion among the interns ranged between moderate and high as reported by 30.6% and 34.7% of the interns respectively.

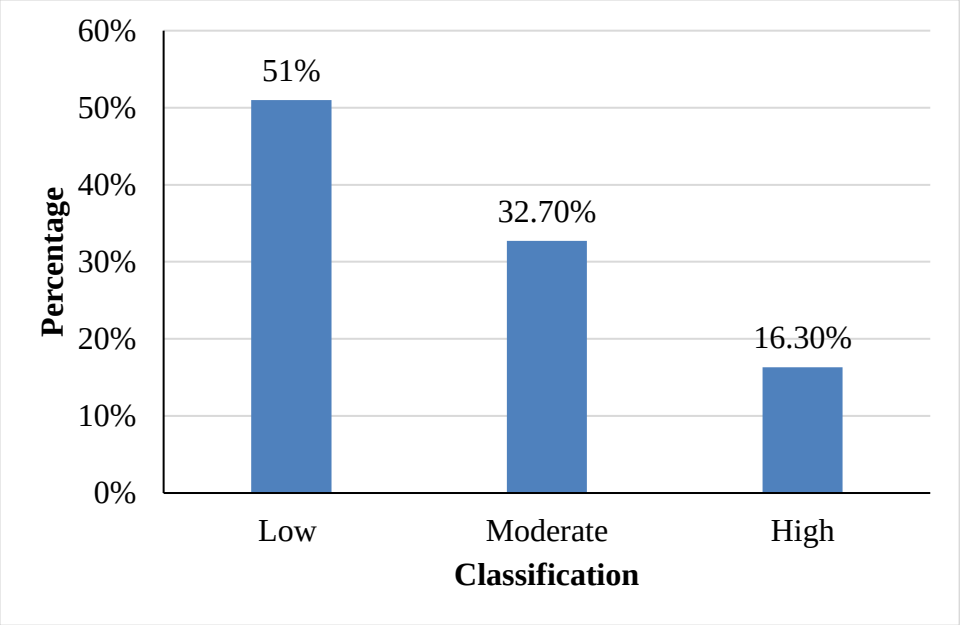

Figure 4.1: Personal accomplishment

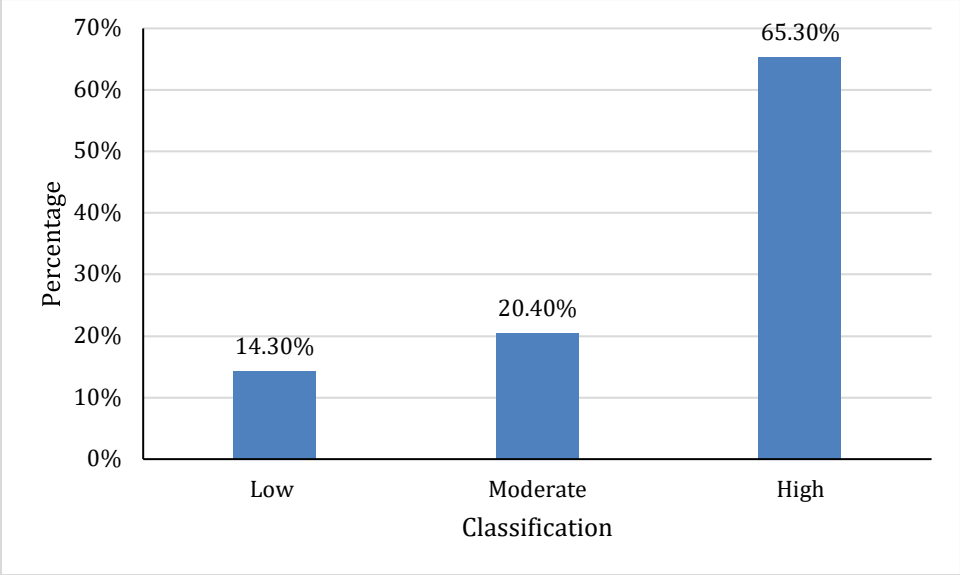

Figure 4.2: Depersonalization

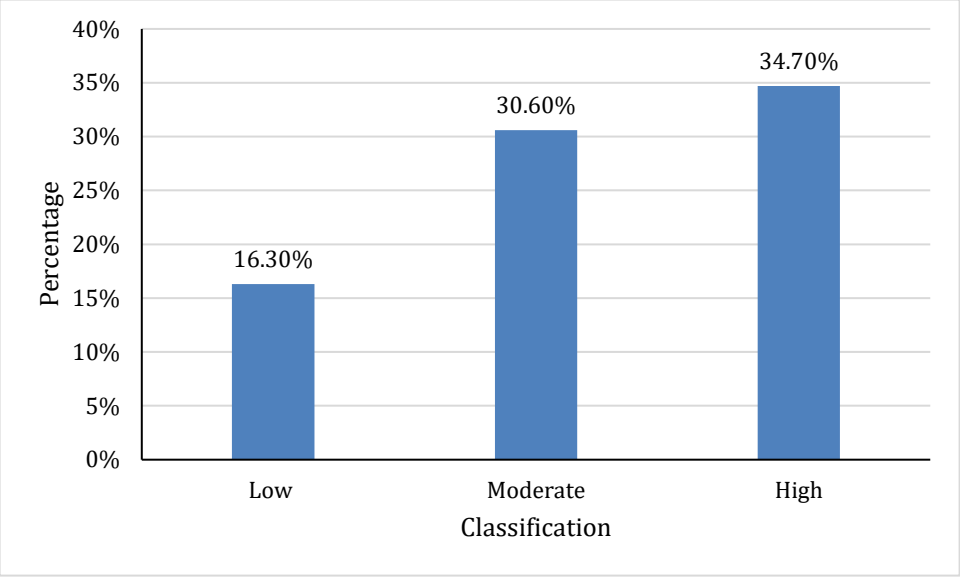

Figure 4.3: Emotional exhaustion

Table 4.6 shows the relationship between measures of burnout and risk factors. The results of the independent t-test analysis showed that the smokers (21.4±4.16) had a significantly higher depersonalization score than non-smokers (11.7±7.26), p-value=0.005. Also, using one way ANOVA, the depersonalization score was significantly higher in married interns (31.54±7.32) compared to those that are in stable relationship (13.05±6.75), p-value = 0.047. Interns without children (13.75±7.51) likewise reported significantly higher depersonalization score compared to interns with children (8±6.22), p-value = 0.038.

However, there is no significant difference between interns who had these factors and their counterparts in terms of the experience of emotional exhaustion and personal accomplishment.

Table 4.6: Burnout and demographics

Demographics	Emotional exhaustion (EE)		Depersonalization (DP)		Personal accomplishment (PA)	
Gender	**Mean (SD)**	**p-value**	**Mean (SD)**	**p-value**	**Mean (SD)**	**p-value**
Male	27 (15.16)	0.364	12.17 (8.18)	0.715	31.06 (10.60)	0.525
Female	30.32 (10.210)		13 (7.32)		32.77 (8.05)	
Smoking						
Yes	39 (6.403)	0.055	21.4 (4.159)	0.005*	32.2 (4.438)	0.98
No	27.98 (12.25)		11.7 (7.26)		32.14 (9.412)	
Alcohol						
Yes	29.27 (10.07)	0.95	14.4 (6.02)	0.30	33.8 (3.65)	0.389
No	29.03 (13.19)		11.94 (8.135)		31.41 (10.51)	
Relationship status						
Single	31.87 (10.99)	0.123	30 (10.86)	0.047*	23.31 (14.34)	0.349
Stable relationship	14.87 (7.78)		13.08 (6.75)		8.46 (6.65)	
Married	30.74 (8.97)		31.54 (7.32)		35.23 (10.41)	
Pre-medicine degree						
Yes	27.8 (13.32)	0.63	12.8 (7.88)	0.95	34 (10.06)	0.34
No	29.68 (11.85)		12.65 (7.56)		31.32 (8.52)	
Children						
Yes	25.44 (14.73)	0.325	8 (6.23)	0.038*	33.67 (9.63)	0.579
No	29.93 (11.63)		13.75 (7.51)		31.8 (8.95)	

As shown in Table 4.7, perceived poor sleep showed a strong significant positive moderate correlation with emotional exhaustion and moderate significant positive correlation with depersonalization but it had a moderate significant negative correlation with personal

accomplishment (i.e., an increase in perceived poor sleep score increases the EE and DP score but decreases the PA score).

Table 4.7: Burnout and stressors

Stressors		Emotional exhaustion	Depersonalization	Personal accomplishment
Perceived poor sleep	Correlation Coefficient	0.695***	0.478**	-0.408*
	p-value	0.00	0.003	0.012
Too frequent calls per month	Correlation Coefficient	0.533**	0.279	-0.408*
	p-value	0.001	0.095	0.012
Work not appreciated by colleagues	Correlation Coefficient	0.515**	0.322	-0.289
	p-value	0.002	0.059	0.092
Struggle to balance family life and work	Correlation Coefficient	0.586***	0.395*	-0.363*
	p-value	0.000	0.016	0.027
Administration not responsive to personal problems	Correlation Coefficient	0.194	0.174	-0.381**
	p-value	0.251	0.304	0.02
Administration not sensitive to plights of interns	Correlation Coefficient	0.389*	0.235	-0.613***
	p-value	0.017	0.161	0.00
Not enough supervision from senior colleagues	Correlation Coefficient	0.519***	.377*	-.403*
	p-value	0.001	0.021	0.013
Hostile senior colleagues	Correlation Coefficient	0.399*	0.062	-0.31
	p-value	0.015	0.714	0.062
Cash flow problem	Correlation Coefficient	0.29	0.119	-0.058
	p-value	0.081	0.483	0.734

Not enough time for leave and vacation	Correlation Coefficient	0.590***	0.262	-0.277
	p-value	0.000	0.117	0.098
Not enough time for recreational activities	Correlation Coefficient	0.336*	0.198	-0.058
	p-value	0.042	0.241	0.734
Not enough people employed to do the job	Correlation Coefficient	0.282*	0.068	-0.119
	p-value	0.091	0.69	0.485

Correlation coefficient
0.1– 0.3 – small correlation
0.4 – 0.6 – moderate
> 0.7 – strong

p-value *
< 0.05
** < 0.01
*** < 0.001

In the same vein, too frequent calls per month, work not appreciated by colleagues, struggle to balance family life and work, inadequate supervision from senior colleagues and insufficient leave time had a moderate and positive relationship with emotional exhaustion but struggle to balance family life and work and insufficient leave time had weak correlation with depersonalization. Most of the stressors had negative correlation with personal accomplishment (Table 4.7). For instance, too frequent calls per month, administration not sensitive to plights of interns, inadequate supervision from senior colleagues had moderate but negative correlation while, administration not responsive to personal problems and struggle to balance family life and work had weak correlation with personal accomplishment. Perceived poor sleep showed a significant positive moderate correlation with Emotional exhaustion and depersonalization and a significant negative moderate correlation with Personal accomplishment (an increase in perceived poor sleep score increases the Emotional exhaustion and Depersonalization score but decreases the Personal

accomplishment score). (Note that Personal accomplishment score is an inverse scale – the higher the score, the lower your personal accomplishment).

Table 4.8 showed that respondents that have witnessed Intra uterine death and Gynaecological patient dying scored significantly higher on the Depersonalization subscale. Respondents that have witnessed a gynaecological patient dying scored significantly higher on the Emotional exhaustion subscale as well.

Table 4.8: Burnout and adverse conditions

Maternal death (N=75)	**N**	**%**	**Emotional exhaustion**	**Depersonalization**	**Personal accomplishment**
Yes	16	21.3	33.85 (9.85)	15.08 (6.49)	30.77 (8.7)
No	59	57.3	27.39 (12.65)	11.83 (7.84)	32.64 (9.18)
p-value			0.103	0.189	0.527
Intra uterine death					
Yes	31	41.3	32.55 (10.47)	15.55 (6.15)	30.4 (8.39)
No	44	42.7	26.72 (12.92)	10.72 (7.93)	33.34 (9.35)
p-value			0.101	0.027*	0.265
Neonatal death					
Yes	18	24	32.64 (10.81)	14.91 (5.89)	30.73 (8.50)
No	57	76	28.08 (12.53)	12.05 (7.95)	32.55 (9.21)
p-value			0.28	0.275	0.559
Baby born in a poor condition					
Yes	22	29.3	32.86 (10.47)	15.64 (6.64)	31.79 (7.07)
No	53	70.7	27.6 (12.67)	11.51 (7.69)	32.29 (9.76)
			0.176	0.085	0.863
Gynaecological patient dying Yes					
	20	26.7	37 (10)	18.92 (6.64)	29.83 (9.37)

No	55	73.3	26.54 (11.86)	10.68 (6.78)	32.89 (8.88)
p-value			0.008*	0.001*	0.311
Maternal near miss					
Yes	2	28	33 (10.08)	15.62 (7.64)	33.23 (7.90)
No	154	72	27.69 (12.73)	11.64 (7.37)	31.75 (9.44)
p-value			0.182	0.105	0.616

Table 4.9: Burnout and work routine

Work routine		**Emotional exhaustion**	**Depersonalization**	**Personal accomplishment**
Hours work per week	Correlation Coefficient p-value	-0.211 0.146	-0.102 0.484	0.192 0.186
Calls per month	Correlation Coefficient p-value)	0.142 0.33	0.194 0.182	-0.163 0.263
Weekend calls per month	Correlation Coefficient p-value	0.079 0.588	0.199 0.171	-0.241 0.095

As outlined in Table 4.9, there was no significant correlation between work routine and the measures of burnout, p-value > 0.05.

CHAPTER FIVE - DISCUSSION

5.1.PREVALENCE OF BURNOUT

The study revealed that interns in the department of Obstetrics and Gynaecology of the University of The Witwatersrand Academic Hospital were burnt out in all three (3) subscales of the Manslach Burnout inventory (MBI). The prevalence of burnout amongst our interns was determined to be 36.7%. The most common form of burnout in the interns was in the personal accomplishment subscale with a mean of 32.14. The second leading form was emotional exhaustion with a mean of 29.10. Depersonalization was the least form of burnout with a mean score of 12.69. About 32% of our respondent had moderate burnout on the PA subscale, whilst 65% and 34% scored high on the DP and EE Subscales. Our finding was in keeping with other studies which have reported burnout rate of between 32 to 65%[16, 26]. Married couples scored higher on the depersonalization subscale so also were smokers. However, those with children scored lower on the depersonalization subscale probably because having kids of your own will make you feel more compassion for human life. Our finding was the opposite of that by Thorsen[25]. Thorsen *et al* reported that the higher the number of children, the higher the likely predictor for burnout on the depersonalization and personal accomplishment subscales[25]. This contrasted with the findings by Nematpour *et al* who did not find any correlation between demography and burnout (sex, marital status) [23].

5.2.DEMOGRAPHY OF STUDY POPULATION

Gender:

The finding in our study was that our study population there were more female interns than male. This finding is similar to other studies[16,52,53,54,55]. Possible explanations to this may be the increased global awareness of the importance of girl child education and the increased enrolment of the girl child into medical colleges. Aside from female interns outnumbering their male colleagues, this study also found out that they were more at risk for burnout. Whilst data supports the fact that female enrolment into medical school is higher [56], same cannot be clearly stated for gender as a cause for burnout.

There are different risk factors for the development of burnout. These factors can be personal/individual, organizational or societal. Although the origin of burnout is multifaceted, an important link has been seen between the feeling of burnout and gender discrimination[57]. Interestingly, these factors may differ amongst different genders[58, 59]. Gender related differences are not persistently looked into in studies of medical doctors' burnout, mental wellbeing and physician satisfaction[58]. Our study found female interns to be more prone to burnout. This finding is similar to other studies[58, 59, 60.] However, it should be noted that most studies on prevalence of burnout did not study the exact causes/ mechanism of burnout in this gender/ group.

A possible explanation for females being more prone to burnout may be related to the fact that they have to worry about sexual harassment and exploitation for sex in the work place. In addition, delayed career progression is a factor they worry about more than their male colleagues as they tend to suffer more impediments to progression. Coupled with these factors, they also have to balance the act of raising a family whilst keeping their careers in view.[53, 60]

Smoking:

We found about 12% of our study population to be smokers. This prevalence of smoking amongst our interns is lower than the average national percentage as determined by a national survey carried out in 2015 by Reddy et al to find out the prevalence of tobacco use among adults in South Africa. In their study, the prevalence of tobacco smoking was 17.5%[61]. Although less than 15% of our study populations were smokers, there was a positive correlation of smoking with getting burnout. Our finding mirrored findings by Fernades *et al* who also found a positive correlation/ statistical significance between smoking and the MBI subscales of EE, DP and low achievements[62]. However, our finding was in contrast to the finding of Avci *et al*, who did not find a link between smoking and burnout[63].

Alcohol:

Almost half the study population (47.4%) admitted taking one form of Alcohol or the other. This a bit higher than the national average of 33% as determined by the self-reported use of alcohol studies by Vellios *et al* [64]. To give a succinct reason for this higher rate of alcohol intake by interns maybe difficult, but it may be safe to postulate that doctors drink more as a means of escape from the harrowing times faced at work. It is important to note that there was no correlation between

alcohol use and burnout. This finding is similar to the findings of Avci *et al* and also corroborates the findings of Fernandes *et al* who found no statistical significance between alcohol use and burnout score[62,63] .

Age:

The average age in our study was 26years with a standard deviation of 2.87. This is in keeping with the study by Hough where the average age of medical interns was on average 27years [54]. This age is easy to understand if we consider that the average medical student goes into medical school at 18-19 years and spend on average 6-7 years studying to become a medical doctor. In addition to the above, a high proportion of our study population also had a first degree before medicine. This may have contributed to the age at graduation. Marchland et al reported that medical practitioners between the ages of 26-45years are more prone to developing burnout[35]. He also observed that burnout reduces in men the older they got but there was a two phased association in women. Women aged 20-35 years and above 55years showed the highest level of burnout. Our study did not have participants older than thirty five years; as a result, the two phase peak in female burnout was not seen. It can be said that burnout is common in this young age group because they are still learning the ropes and finding their direction in the work place. It is also tenable that burnout is less common in older people because they are more resilient and can adapt to things more quickly[65]. It has been suggested that resilience and adaptation are factors capable of mitigating the effect of burnout [66, 67, 68].

Marital status:

About 15% of our study population was married, whilst 34% of the study population was single. The rest of our population (51%) was in a stable relationship. Our finding is similar to what Abdulghani *et al* found in a cross sectional study of three (3) Saudi medical colleges[55]. In our study, being married with kids was protective against depersonalization and emotional exhaustion. This is at variance with study done by Lorga *et al* who did not find any statiscal influence of marriage on burnout[69]. This was opposite the finding of Avci *et al* who reported lower scores on the MBI for emotional exhaustion and depersonalization. These scores further reduced if the couple had kids[63]. The reduced MBI scores for couples with kids may be explained with the fact that having kids may give one a different outlet to pour out their emotional frustrations. It may also be

that those with kids have partners that provide the support system for venting off frustrations and work pressure.

5.3.OTHER ASSOCIATED FACTORS WITH BURNOUT

Negative Obstetrics and Gynecological outcomes:

The finding of a positive correlation between burnout and negative adverse outcomes in Obstetrics or Gynaecology in our study was seen in the study by Ben Ezra *et al* [70]. They reported that intrauterine fetal deaths, miscarriages and maternal deaths were positively correlated with depersonalization and emotional exhaustion[70]. Their finding was in keeping with the study by Gandino who also affirmed that nursing a patient whose pregnancy has a negative outcome (Intra uterine fetal death, or Miscarriage) impacted on the MBI scales with a higher Emotional exhaustion score and hence Burnout but no effect on PA[71]. One plausible explanation for this finding will be the huge emotional investments health care providers invest on the care of their patients. Obstetrics and gynaecology offers one a level of intimacy and connection with patients as you go along with them on the Journey of procreation. A negative outcome thus can be devastating for both practitioner and his client.

Work hours and Burnout:

As suggested by the literature, working shifts and longer than sixty (60) hours a week was associated with burnout[33,43]. Our study did not find this correlation. This may be so because interns who served as our study population undergo supervised work in our hospitals and as such, the pressure was taken off their shoulders by senior colleagues. Despite long hours of work not being associated with burnout in our study, there was however a positive correlation of frequent calls and burnout. This finding of frequent calls being associated with BO was also reported by Stodel [16]. Patel reported a reduction in BO amongst physicians who had their calls cut down to a maximum of one call every week[72]. The study by Patel also found a reduced BO score on Physicians who had less hours of work[72]. An explanation to this could be that during the post call period and weekends, doctors have longer time to spend off work, hence they recover from the stresses from work and get some mitigation from the stressors to BO. Infrequent weekend off duty, will therefore lead to more fatigue and BO.

Inadequate manpower employed to do work

Stodel reported that junior doctors in a Cape Town Hospital found inadequate manpower employed to perform duties in our hospitals as a factor associated with BO[16]. This finding was reiterated by Peltzer who also alluded that inadequate recruitment of staff members / poor manpower employed to do work was a factor responsible for BO amongst doctors[33]. Our findings concurred with these other findings. Interns in the three Academic Hospitals viewed inadequate recruitment of interns as a root factor associated with BO. This factor proved to be an associated factor with its statistical significance.

Sleep deprivation and burnout.

The perception of poor sleep was a major contributor to burnout in our study. This was similar to the finding of Stodel in her work which looked at the intention to leave medical practice by junior doctors in a hospital in Cape Town[16]. This finding was also affirmed by Avci who stated that poor sleep was a significant cause of BO[68]. Rosen *et al* also conducted a study on chronic sleep deprivation and BO; they also reported a higher BO score as sleep deprivation worsened[73].

Leave/ recreational time/ vacation and burnout

An important associated factor with burnout in this study was poor recreational time/ infrequent vacation or leave. There was a positive correlation between inadequate leave and BO especially on the emotional exhaustion scale and depersonalization scale. Inadequate vacation could mean less time for desteaming from the stress of work. This left interns drained and with little time to let go off work stress. This may be a possible explanation to their being burnout. This finding was corroborated by other studies which also reported that poor recreational time and lack of vacation contributed to burnout among doctors.[16, 36, 52, 53].As a consequence of this (BO), doctors were more prone to errors, litigations and loss of job[72].

Hostile work environment:

A hostile work environment was reported as a cause of burnout by Slatten[11]. His finding was in tandem with that of Niranja who also reported a hostile work environment where seniors were hostile to their subordinates and where work done by junior doctors were unappreciated as a contributory factor to BO[46]. Our study also found a positive correlation with hostile seniors and

BO. A hostile work environment may be responsible for chronic stress, feeling of worthlessness and a low self-esteem with the eventual effect of causing BO. This can then lead to inadequate patient care, longer hospital stay or readmission into hospital due to poor care, mental illness and substance abuse (on the part of the doctor)[71].

Administration and burnout

Although our interns did not list management/ administration as a common cause of BO, there was a positive correlation between insensitive administration and BO. Our finding was similar to the findings by Niranja *et al* and also Patel *et al* who reported a hostile management and work environment to be an associated factor to burnout [46, 72]. This was also the report of Slatten and of Stodel *et al*[11, 16]. It is evident that a poor support base at work and insensitivity from management can lead to chronic stress in the work place, depression and inefficiency which in the long run leads to BO and its attendant effects[46].

5.4.CONCLUSION

Burnout is a devastating condition. It is becoming a topical issue globally. Once burnout has setin, it is difficult to reverse. As a result, efforts to combat burnout should be emplaced in every health institution. The effects of burnout are devastating and include poor health care, higher litigation against doctors, substance abuse, and loss of reputation and in the extreme case suicide by health care practitioners.

Accepted methods of militating against burnout include mindful communication, vacation, delegation of duties, moral support to workers, attention to the welfare of workers by health administrators and control of working hours. These factors should be considered in designing roles and duties of healthcare workers.

5.5.RECOMMENDATION

Management should pay heed to recruitment of more interns in our academic Hospitals. This will go a long way in reducing the number of hours put in by interns at work. Also, attention must be paid to hostile work environment with a view to eliminating its effects. More Funds should be available for recreation and vacation and interns should be given time off to engage in recreational activities. To this end, team building events, recreational activities like sports, quiz and dinners should be organized in each block of posting. In addition, sporting facilities should be available and accessible to workers.

Conflict of Interest

There is no conflict of interest to be declared.

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APPENDIX A

Sample questionnaire on associated causes of burnout

1. Male or female
2. Age ---------- (20- 25) (26-30) (31-35) others specify----------
3. In what year did you graduate? ---------- 4. Number of years working as a doctor- ----------
5. Is this your first rotation? ------
6. Did you study any other degree before medicine? ----------
7. Marital status: (single) (Married). (Divorced or Getting divorced) (Widower) (others specify)
8. Number of children.
9. Religion (NO) (YES). If yes specify----------
10. Do you smoke? (no) (yes) if yes , average number of sticks per day----------
11. Do you drink alcohol? (no)(Yes) if yes average unit* per week. (* the approximate unit per week is concentration of alcohol in % multiplied by total volume of alcohol in ml divided by a 100.
12. Do you suffer any chronic medical condition in need of regular follow up and medication? (NO) (YES)
13. Do you have any psychological/ psychiatric condition needing regular follow up? (NO) (YES)
14. Do you use any mind altering substance/ drug/ psychotropic? (No, never used) (Yes, Current use) (Yes, past use only)
15. Have you suffered the loss of any close relative that affected you deeply in the last one year? (no) (yes)

16. Current hospital. (CHBAH) (CMJAH) (HJH) (RMMCH)

17. Please state number of working hours per week----------
18. Please state number of calls per month----------

19. Number of weekend calls per month---------- 20. Do you feel stressed by the job? If yes , answer 21

21. On a scale of 1 to 5, with 5 being worse stressor , score factors causing stress at work

(A) Perceived poor sleep

(B) Too frequent calls per month

© Work done not appreciated by others and colleagues

(D) Struggling to balance family life and work

(E) Administration not responsive to personal problems/ condition

(F) Administration not sensitive to plights of interns

(G) Not enough supervision from senior colleagues

(H) Hostile senior colleagues

SAMPLE FOR EMAIL CONSENT

My name is Dr Peter Odine, a registrar in the Obstetrics and Gynaecology department; I am doing a research for my MMED. The research topic is: Prevalence of Burnout and associated causative factors amongst interns in the department of obstetrics and gynaecology, University of the Witwatersrand.

I have attached a questionnaire to this mail which intends to find out some information vital to this study. Be assured that whatever information you provide is strictly confidential and is solely for the research purpose.
By filling out the questionnaire and returning same via this email, you consent to the use of the information provided for this research.

You may decide not to answer the questions in the questionnaire with no consequences.
However, I will highly appreciate it if you can answer the questions to aid my research.

Thank you Dr Peter

Odine

drpeterodine@gmail.com

APPENDIX B

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

Office of the Deputy Vice-Chancellor (Research & Post Graduate Affairs)

TO: Dr P Odine
School of Clinical Medicine
Department of Obstetrics and Gynaecology
Medical School
University

E-mail: drpeterodine@gmail.com

CC: Supervisor: Professor H Lombaard and Dr B Nkomo
<Hendrik.Lombaard@wits.ac.za>
and <HREC-Medical.ResearchOffice@wits.ac.za>

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

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

DATE: 12/11/2018

REF: *R14/49*

PROTOCOL NO: **M180551** *(This is your ethics application study reference number. Please quote this reference number in all correspondence relating to this study)*

PROJECT TITLE: *Burnout amongst interns in the Obstetrics and Gynaecology Department of the University of the Witwatersrand academic hospitals*

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 the Government funding of the University.

MSWorks2000/Iain0007/Clearscan.wps

UNIVERSITY OF THE
WITWATERSRAND
JOHANNESBURG

R14/49 Dr P Odine

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M180551

NAME: (Principal Investigator)	Dr P Odine
DEPARTMENT:	School of Clinical Medicine Department of Obstetrics and Gynaecology Medical School University
PROJECT TITLE:	Burnout amongst interns in the Obstetrics and Gynaecology Department of the University of the Witwatersrand academic hospitals
DATE CONSIDERED:	25/05/2018
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Professor H Lombaard and Dr B Nkomo
APPROVED BY:	Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	12/11/2018

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

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on 3rd floor, Phillip V Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.
I/We fully understand the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to resubmit 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 of the meeting when the study was initially reviewed. In this case, the study was initially reviewed in **May** and will therefore reports and re-certification will be due early in the month of **May** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature _____ Date _____

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES