

**A STUDY OF BURNOUT SYNDROME AMONG ANAESTHETIC
CARE PROVIDERS IN ZAMBIAN HOSPITALS**

BY

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**A dissertation submitted to the University of Zambia in partial fulfilment of the
requirements of the degree of Master of Medicine in Anaesthesia and Critical Care**

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Dr. Mbangi Chilufya Mumbwe

2019

DEDICATION

To my late mother, Dr. Daphne K. N. Mumbwe. Your belief in me is more alive now than ever. I saw the odds, you saw the potential. I failed, you encouraged me to try harder. I succeeded, you shared my joy and made me understand I could do even better.

‘You are different. That’s not to say you cannot achieve what others can.’

Thank you

DECLARATION

I, Dr. Mbangi Chilufya Mumbwe, hereby do declare that this dissertation, herein presented for the degree of Master of Medicine in Anaesthesia and Critical Care, represents my own work and has not been previously submitted either in whole or in part for any other degree at this or any other university, nor being currently submitted for any other degree.

SIGNED

APPROVAL

This dissertation of Dr. Mbangi Chilufya Mumbwe is approved as fulfilling part of the requirements for the award of the degree of Master of Medicine in Anaesthesia and Critical Care by the University of Zambia.

Examiner 1 _____ Signature _____ Date _____

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Supervisor _____ Signature _____ Date _____

ABSTRACT

Burnout is a psychological syndrome that results from chronic exposure to job stress. Anaesthesia is internationally recognised as one of the most inherently stressful medical disciplines and this is often compounded by unique challenges within the anaesthetic care provider's working environment. It is important, therefore, to assess the extent to which burnout affects Zambian anaesthetic care providers as patient safety, the physical and mental health of the anaesthetic care provider and the efficient institutional running are all risked in the presence of burnout.

The study therefore aimed to determine the prevalence of burnout syndrome among anaesthetic care providers working in Zambian hospitals and to determine which sociodemographic and occupational factors were more predictive of burnout.

A cross sectional study among 160 anaesthetic care providers (out of an estimated total of 184) working in various public and private hospitals in Zambia was performed using the Maslach Burnout Inventory-human services survey, a validated tool, which is widely used to assess the presence of burnout among health professionals. Sociodemographic and occupational factors postulated to be associated with burnout were also assessed using a separate structured questionnaire.

Burnout syndrome was detected in 51% of the 160 respondents, of these 86% were non-physician anaesthetists working in different hospitals in the country. Logistic regression analysis revealed that "not having the right team to carry out work to an appropriate standard" (odds ratio 2.91 95% C.I. 1.33-6.39, $p=0.008$), and being non-physician (odds ratio 3.4, 95% C.I. 1.25-12.34, $p=0.019$) were the strongest predictors of burnout in this population.

Burnout levels among Zambian anaesthetic care providers are high. The study findings suggest that increasing the numbers of providers in general may reinforce the hospital anaesthetic team structure thereby reducing isolation. Furthermore, investing in training more physician anaesthetists may be protective.

Keywords: anaesthesia, burnout, human resources

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ABBREVIATIONS

BOS	Burnout syndrome
DP	Depersonalization
EE	Emotional exhaustion
HPCZ	Health Professions Council of Zambia
MBI-HSS	Maslach Burnout Inventory-Human Services Survey
MOH	Ministry of Health
PA	Personal accomplishment
SAZ	Society of anaesthesia of Zambia
UTH	University teaching hospital

CHAPTER ONE: INTRODUCTION

1.1 Background

Burnout can be defined as a syndrome consisting of emotional exhaustion, depersonalization and reduced personal accomplishment and can occur among human service professionals (Maslach and Jackson, 1986). It occurs when there is a chronic mismatch between job demands and resources to cope with the demands (Moradi, 2015). Emotional exhaustion refers to feelings of strain and fatigue toward overtaxing job demands that overwhelm one's coping abilities (Ahola and Hakanen, 2007). The second dimension, depersonalization, refers to a coping mechanism that the burnt-out victim adopts which involves withdrawal from work and detachment from people entrusted to one's care (such as patients) or feelings of cynicism (Ahola and Hakanen, 2007). The third dimension of reduced personal accomplishment represents feelings of frustration towards work and lack of successful achievement within one's job and organization (Ahola and Hakanen, 2007).

Burnout syndrome, unlike depression, only manifests when one is within the work environment or involved with work-related activity (Yasmin *et al.*, 2011) It is reversible with change in working conditions and adequate recuperation hence making its early detection crucial (Yasmin *et al.*, 2011).

According to Tarek *et al.* (2012), anaesthesia has been internationally recognized as a stressful specialty and anaesthetists are often faced with a job demand-supply mismatch that predisposes them to burnout syndrome. It has negative consequences for the anaesthetist such as tiredness, impaired alertness, frequent medical errors, mood disturbances such as irritability, strained interpersonal relationships at work, substance misuse and suicidal ideation (Shanafield *et al.*, 2010). In addition, the syndrome has negative institutional consequences such as frequent absenteeism, medico-legal issues arising from preventable errors in judgement, low staff recruitment, frequent staff transfers and reduced quality of service to patients (Moradi, 2015). These negative consequences can pose an obvious risk to patient safety as well as the health of the anaesthetist (Moradi, 2015). The topic emphasises the need for health institutions to incorporate various system-level interventions as policy to make the work environment more favourable for sensitive specialties such as anaesthesia which would result in safer patient care with less morbidity and mortality rates, and a motivated, healthier and competent workforce to give a higher quality of care (Hodges *et al.*, 2007).

Internationally, numerous studies have been performed to determine the levels of burnout among anaesthetists but none has been done in Zambia and therefore its prevalence is currently unknown.

Therefore, this study intends to determine the prevalence of burnout syndrome among anaesthetists working in Zambian hospitals and serve as a basis to encourage policy makers to consider adopting measures that decrease the negative impact of burnout on patient safety and anaesthetic service delivery. Furthermore, the data obtained in this study will be used to assess improvement (or lack of) in burnout levels following targeted system interventions.

1.2 Statement of the problem

Burnout syndrome threatens the provision of quality care to patients within anaesthesia and negatively affects the well-being of the affected anaesthetic care providers. Presently, the anaesthesia workforce in Zambia is overwhelmed by demand and the work environment is under-resourced, according to the World Federation of Societies of Anaesthesia's 2017 workforce survey in anaesthesia and analgesia. This poses a direct strain on the anaesthetic care providers which may culminate into burnout syndrome.

It is essential that burnout syndrome is identified and quantified in order to provide the basis for suggesting and evaluating coping/preventive strategies. This will help minimize the risk to staff and ensure patient safety.

1.3 Justification of the study

This study underscores the importance of identifying and mitigating burnout syndrome, an internationally recognized hazard to the provision of safe and quality care for patients. This is necessary to allow anaesthetic care providers to deliver the best of their skill and knowledge acquired in years of training, with subsequent higher safety standards for their patients and a better work environment which promotes competence, compassion and cohesiveness.

The anaesthesia workforce in Zambia is overburdened. Anaesthetic services have largely been driven by non-physician (clinical officers and nurse anaesthetic officers) anaesthetic care providers who work in under-resourced environments and often without supervision or a supportive team as there are not enough numbers of qualified higher-ranking physician anaesthetists. This prompted the initiation of the UNZA Anaesthesia and Critical Care MMED program by the UK Department for International Development and the Tropical Health and Education Trust, in conjunction with the valuable contribution from Ministry of Health and

UNZA, to train post graduate medical doctors to become physician anaesthetists and therefore improve the staff numbers.

This study also cites various works of research into burnout syndrome among anaesthetists in various high and low income country hospitals which reaffirm that it is a significant hazard to provision of quality and safe patient care if left unaddressed.

As perioperative specialties and patient burden grow (with population growth), demands on specialties such as anaesthesia are only likely to increase hence heightening burnout risk

1.4 Research question

What is the prevalence of burnout syndrome among anaesthetic care providers in Zambian hospitals?

1.5 Objectives

1.5.1 General objective

To determine the prevalence of burnout syndrome (BOS) among anaesthetic care providers working in Zambian hospitals

1.5.2 Specific objectives

1. To evaluate the effect and strengths that various sociodemographic factors (namely age, gender, marital status and presence/absence of children) have on the anaesthetist's risk of developing BOS.
2. To identify which occupational factors (such as job position held, presence of team support or supervision, number of years in current position, availability of equipment and medication, perception of remuneration, working hours, workload and vacations obtained) that could heighten or decrease the risk of the anaesthetist developing BOS.

CHAPTER TWO: LITERATURE REVIEW

2.1 Defining Burnout

The concept of “burnout”, a term originating in the USA in the 1970s (Freudenberger, 1974; Maslach, 1976) has been defined as:

“a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment that can occur among individuals in human service professions due to excessively demanding and stressful working conditions that surpass the worker’s coping capacity and frustrating their expectations” (Maslach and Jackson, 1981).

Maslach and Jackson developed the internationally validated Maslach Burnout Inventory (MBI) for detecting and measuring the severity of Burnout syndrome (Rosa Suñer-Soler *et al.*, 2014). There are currently three versions of the inventory in use namely; the MBI-human services survey (specifically designed for health professionals such as anaesthetists with demanding social interactions); the MBI-educator’s survey (designed for primary and secondary education teachers); and finally, the MBI-general survey (designed for occupations outside health which do not necessarily involve demanding social interactions) (Bria *et al.*, 2014). Researchers such as Schaufeli and Enzmann (1998) reaffirm that the Maslach burnout inventory human services survey (MBI-HSS) has dominated the field as a tool for measuring burnout among health workers due to its multidimensionality and is of proven reliability and validity. It is a 22-item questionnaire in which the participant has to estimate the frequency at the professional level on a 7-point Likert scale, ranging from never experiencing those feelings (0 points) to having those feelings every day (7 points) (Felton, 1998). It assesses the three aspects of burnout independently: emotional exhaustion, depersonalisation and low personal achievement (Edno *et al.*, 2013, Poncet *et al.*, 2006). The emotional exhaustion sub-scale contains nine items with a score varying from 0–54. The depersonalization sub-scale includes five items with a score from 0–30. The personal accomplishment sub-scale is composed of eight items with a score ranging from 0–48 (Felton, 1998). According to Maslach, burnout syndrome is present if there are high scores in emotional exhaustion (>27) and high scores in depersonalisation (>10) subscales and low scores in personal achievement (<40) subscale.

2.2 Management of BOS

Gitto and Trimarchi (2016) emphasize that the most effective treatment for burnout is prevention which is more effective if targeted at individual workers. Primary prevention consists of eliminating and/or reducing possible stressors, secondary prevention is characterized by early detection of depression and anxiety symptoms and tertiary prevention involves recovery and rehabilitation (Ward *et al.*, 2008). However, Khetarpal *et al.* (2015) observe that affected health workers are reluctant to reveal their problems in case they prejudice their career prospects or job security therefore making communication skills and assertiveness of paramount importance in dealing with stress.

2.3 BOS among anaesthetists in resource challenged environments

Health care providers, and anaesthetists more specifically, in developing countries face enormous challenges such as shortage of equipment and drugs, inadequate workforce, lack of adequate teaching/education systems, growing demand for anaesthetic services and growing public expectations for the quality of services rendered (Hodges *et al.*, 2007). The current situation in Zambia is that the available man-power within anaesthesia departments at both large and small institutions is significantly outstripped by demand (Snell and Bonnet, 2014). This has been compounded by the fact that for a long period of time there had not been any locally offered opportunities for post-graduate medical doctors to pursue MMED Anaesthesia and Critical Care; a situation which has seen many health facilities across the country turning to the few available foreign-trained physician anaesthetists and locally trained non-physician anaesthetists (clinical and nurse anaesthetic officers) to cope with the demand (Snell and Bonnet, 2014). Providing anaesthetic care in such an under-resourced environment can potentially compound the risk of burnout (Nicolaas *et al.*, 2015).

2.4 BOS prevalence and the role of occupational and sociodemographic factors

When considering the risk factors for developing burnout syndrome, one has to consider the unique sociodemographic and job characteristics of the anaesthetist as these may amplify or buffer the impact of job strain (Gupta *et al.*, 2015). Determinants of burnout consist of job characteristics, work place climate, workload, demographic variables (sex, age) and personality traits (Embriaco *et al.*, 2007). In South Africa, Nicolaas *et al.* (2015) found a burnout prevalence of 21% among 124 physician anaesthetists and that of these, more females than

males were affected and less experienced anaesthetists were more affected than their senior colleagues. Hagau and Pop (2012) found high prevalence rates of burnout among 296 Romanian anaesthesia and intensive care physicians, and that female gender and daily workload were the strongest predictors. Ranjana *et al.* (2015) demonstrated that certain aspects of the anaesthetist's job such as availability of supervision and team support could affect the risk of burnout. They found that anaesthetists working in teaching hospitals with better operating room assistance experienced less job stress and subsequent burnout than those in community hospitals with much less support. To highlight the importance of job characteristics in terms of affecting the occupational wellbeing among anaesthetists, Gastao *et al.* (2014), in their Brazilian study, noted that the following were frequently cited risk factors: lack of control of the workday; interference with family life; medical and legal concerns of the job; conflicts in professional relationships; lack or inadequate team support; managing critical incidents and dealing with a patient's death.

Maslach *et al.*, (2001) identified six types of organizational stressors that may put the health care professional at risk of burnout namely: work overload; lack of control (conflict situations or role ambiguity); insufficient gratification; collapse of the sense of community and belonging (when teamwork is lacking); and unequal treatment within the same organization. They further add that the healthcare professional is more exposed to burnout than other workers because not only is he/she in contact with patients needing a high level of care, but he/she has also to observe a strict organization of work, challenging interpersonal relationships with colleagues and superiors, and is often compensated with a remuneration that is not rewarding.

Tarek *et al.* (2012) demonstrated, in their study among 96 career anaesthetists at an Egyptian hospital, that job position may also play a role towards development of burnout. It was observed that senior anaesthetist professors were rarely affected by this problem probably due to experience in coping with stress and their ability to alter their work environment to suit their work schedule as compared to their junior colleagues.

2.5 The negative consequences of BOS

To further stress the significance of burnout syndrome and its costly consequences, Gastao *et al.* (2014) point out that a stressed anaesthetist may lose control in crisis situations and that for the safe practice of anaesthesia, care givers should be in their best physical, mental and emotional conditions in order to successfully integrate and apply all their knowledge and practical skills. Burnout makes the professional more prone to errors (Gastao *et al.*, 2014).

Probst *et al.*, (2012) further demonstrate the negative behavioural responses to burnout, as highlighted in various literature, to include alcohol and drug misuse, physical withdrawal from co-workers, increased absenteeism, arriving for work late and leaving early, and employee turnover. They further add that an extreme reaction to stress can be suicide, even though the pathway to this is complex and multifactorial. At intellectual level, there may be difficulty to concentrate, impairment of vigilance, and reduced work performance (Alves, 2006). The chronic exposure to stress might result in physical diseases namely, gastroduodenal ulcer, gastritis, hypertension, arrhythmia, angina, musculoskeletal diseases, neurological disorders, decreased immunity, reproductive disorders and increased risk of spontaneous abortion (Jackson SH, 1999). The negative effects of the syndrome have also been studied at family level and they might include difficulties in balancing work and family life, failure in establishing or maintaining relationships with one's children, difficulties in marital relationship, lack of emotional support, isolation, divorce and family breakdown (Firth-Cozens J., 1999)s. In addition, increased reaction times have been reported during stressful periods in routine anaesthetic practice. Thus, employees who are burnout by their work are characterized by the combination of an enduring physical, cognitive, and emotional deterioration of health, negative attitude (cynicism) and reduced professional efficacy (Cherniss, 1980).

According to the National Institute for Health and Care Excellence, promoting the mental wellbeing of employees can yield economic benefits for the business or organisation, in terms of increased commitment and job satisfaction, staff retention, improved productivity and performance, and reduced staff absenteeism (NICE, 2009). Embriaco *et al.* (2007) further stress the need for incorporating preventive measures and devising coping strategies at individual and organizational level, in order to enhance worker capacity and minimise burnout risk.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Study design

This was a quantitative cross sectional study

3.1.1 Sites

Anaesthetic care providers from 46 public, mission, military, mine and private hospitals across the country affiliated to ministry of health that offer formal anaesthetic services.

3.1.2 Target population

All anaesthetic care providers working in Zambian hospitals.

3.1.3 Study Population

160 anaesthetic care providers working at the study sites who consented to participation and met the eligibility criteria.

a) Inclusion criteria

Qualified anaesthetic care providers working in various hospitals in Zambia affiliated with the ministry of health, HPCZ or society of anaesthetists of Zambia (SAZ).

b) Exclusion criteria

1. Anaesthetic care providers who declined to participate
2. Absence of formal anaesthesia training yet informally trained to provide anaesthetic care
3. Anaesthetic care providers not affiliated or registered with the MOH, HPCZ or SAZ
4. Students or trainees (who have not formally attained the status of ‘anaesthetist’)

3.1.4 Sample size

The sample size was calculated at 227 using the prevalence formula as shown below using the following assumptions:

Margin of error of 5%, confidence level of 95%, and an estimated population incidence of 18% (from studies in literature of similar population).

$$SS = Z^2 \times P \times (1-P) / C^2$$

SS: sample size

Z: Z value (1.96 for a 95% confidence level)

P: estimated population incidence of BOS, expressed as a decimal, 0.18 in this case.

C: confidence interval, expressed as decimal, 0.05 in this case.

3.1.5 Study duration

September 2017 to February 2018

3.2 Data collection

3.2.1 Data collection tool

A structured 2-part questionnaire was administered to the study participants. The questionnaire had the following information:

Part 1: Basic demographic data (age, gender, marital status, children) and job characteristics (weekly working hours and shifts, frequency of negative outcomes, vacations, pay and position held)

Part 2: The Maslach burnout inventory human services survey (MBI- HSS) which assesses three dimensions of burnout namely emotional exhaustion, depersonalization and personal accomplishment on a 6 point Likert scale with each response in each dimension graded from 0 to 6. Emotional exhaustion consists of nine items (maximum possible score 54), personal accomplishment eight (maximum possible score 48) and depersonalization five (maximum possible score 30).

3.2.2 Data collection technique

Anaesthetic fora at which anaesthetic care providers from around the country were invited to attend and learn particular skills, in accordance with the continuous medical education and skills training plan in anaesthesia, were specifically targeted to allow the opportunity to explain the study, get consent and hand out hardcopies of the questionnaires to the agreeable participants. These included SAFE Obstetrics workshop, SAFE Paediatrics workshop, Society of Anaesthesia of Zambia annual conference, neonatal resuscitation workshop, regional and pain workshops. These fora occurred between August 2017 and January 2018.

To capture those that did not attend the above-mentioned fora, contact details of all the anaesthetic care providers practicing in Zambian hospitals were requested from the Ministry of Health's Chief Anaesthetic office (upon presenting evidence of ethical clearance) and the anaesthetic care providers were then called by phone and informed of the study after which

permission was then requested to have the questionnaire and consent forms emailed to them electronically.

3.3 Diagnostic criteria

To define the presence or absence of BOS, the criteria used was the internationally recognized definition using obtained scores in the MBI-HSS. BOS is present if one has high scores in emotional exhaustion (>27) and high scores in depersonalisation (>10) subscales and low scores in personal achievement (<40) subscale.

3.4 Variables

The dependent variable was burnout which was dichotomized as burnt out if the participant's scores satisfied the diagnostic criteria stated above or non-burnt out if they did not. This yielded 2 groups: burnt out and non-burnt out.

The independent variables were age, gender, position (physician or non-physician), number of children/dependants, weekly working hours, frequency of negative outcomes, availability of team support, pay and supervision.

3.5 Ethical considerations

Ethical approval was sought from UNZABREC and permission was obtained from the head of department anaesthesia and critical care, senior medical superintendent of the University Teaching Hospital. The research office at ministry of health were also informed of the study.

Participation in the study was voluntary with no form of remuneration given to participants.

Access to the information obtained was strictly limited to the principal investigator and study supervisors to ensure confidentiality.

Participant ID codes were used instead of names to ensure anonymity.

3.6 Data Analysis

Statistical analyses were performed using SPSS software version 24 (IBM, Armonk, NY, USA).

Descriptive statistics were displayed in form of tables, charts and percentages were appropriate including measures of central tendency such as mean, median and standard deviation.

A binary logistic regression model was used to measure the strengths of the selected independent variables in terms of predicting the outcome variable.

P value of < 0.05 at 95% confidence interval was considered statistically significant.

3.7 Study limitations

1. In the context that the study populations of the studies cited were relatively larger than the total number of anaesthetic care providers in Zambia at the time of the study, this could have potentially compromised the power of the study and limited the number of variables that could be fitted into the logistic regression model to avoid overfitting.
2. The skewed numbers of male vs. female and physician vs. non-physician anaesthetists could have led to observations less generalizable to other populations with different contextual factors.
3. The study did not specifically assess the nature of locations where service was provided. A rural or urban specification could have been of statistical significance in predicting burnout outcome.
4. The study did not consider other factors such as substance abuse or suicidal ideation which are important consequences and markers of advanced stage of the syndrome.
5. Sensitive information such as frequency of negative outcomes experienced might have been underreported.

CHAPTER FOUR: RESULTS

4.1 Baseline characteristics of the study population

A total of 160 anaesthetic care providers (out of an estimated countrywide total of 184) participated in the study. This equated to a response rate of approximately 87%. The mean age was 41 (Figure 1). 43 (26.9%) were female and 117 (73.1%) males. The average number of dependants looked after in this study population was estimated to be 3 (Figure 2). 23 (14.4%) were physician and 137 (85.6%) were non-physician, with an average period of time spent in training estimated at 3 years (Figure 3). 140 (87.5%) were married, 18 single (11.5%) and 2 (1.3%) either divorced or widowed. 149 (93.1%) reported being employed on a full time basis, 5 (3.1%) part time and 6 (3.8%) on a contract basis. The mean weekly workload in hours was estimated to be 67 hours (SD=19.2). 4 (2.5%) frequently saw patients have negative outcomes such as death or permanent disability, 4 (2.5%) sometimes, 17 (10.6%) occasionally, 130 (81.3%) rarely and 5 (3.1%) never. 32 (20%) had reported seeing negative outcomes in the previous month at a frequency more than usual, 14 (8.8%) the same as usual and 114 (71.3%) less than usual. 8 (5%) felt that they did not have the right equipment to carry out their work to an appropriate standard every time, 15 (9.4%) usually, 17 (10.6%) frequently, 64 (40%) sometimes, 45 (28.1%) occasionally, 10 (6.3%) rarely and 1 (0.6%) never. 5 (3.1%) felt they did not have the right team around them to carry out work to an appropriate standard, 5 (3.1%) usually, 72 (45%) sometimes, 37 (23.1%) occasionally, 19 (11.9%) rarely and 2 (1.3%) never. 2 (1.3%) reported that they were often supervised by a senior colleague usually, 4 (2.5%) frequently, 5 (3.1%) sometimes, 8 (5%) occasionally, 93 (58.1%) rarely and 48 (30%) never. 4 (7.3%) felt like they usually did cases they were not comfortable with without senior support, 69 (43.1%) frequently, 18 (11.3%) sometimes, 12 (7.5%) occasionally, 47 (29.4%) rarely and 7 (4.4%) never. 110 (68.8%) felt they received their pay on time, 50 (31.3%) did not. 11 (6.9%) felt the pay was on par with the service rendered whereas 149 (93.1%) did not. In this study population, an anaesthetic care provider had been involved in independent private practice for an average duration of 5 years (Figure 4). The average number of vacation days taken in the previous year for this study population was estimated at 21 days (Figure 5)

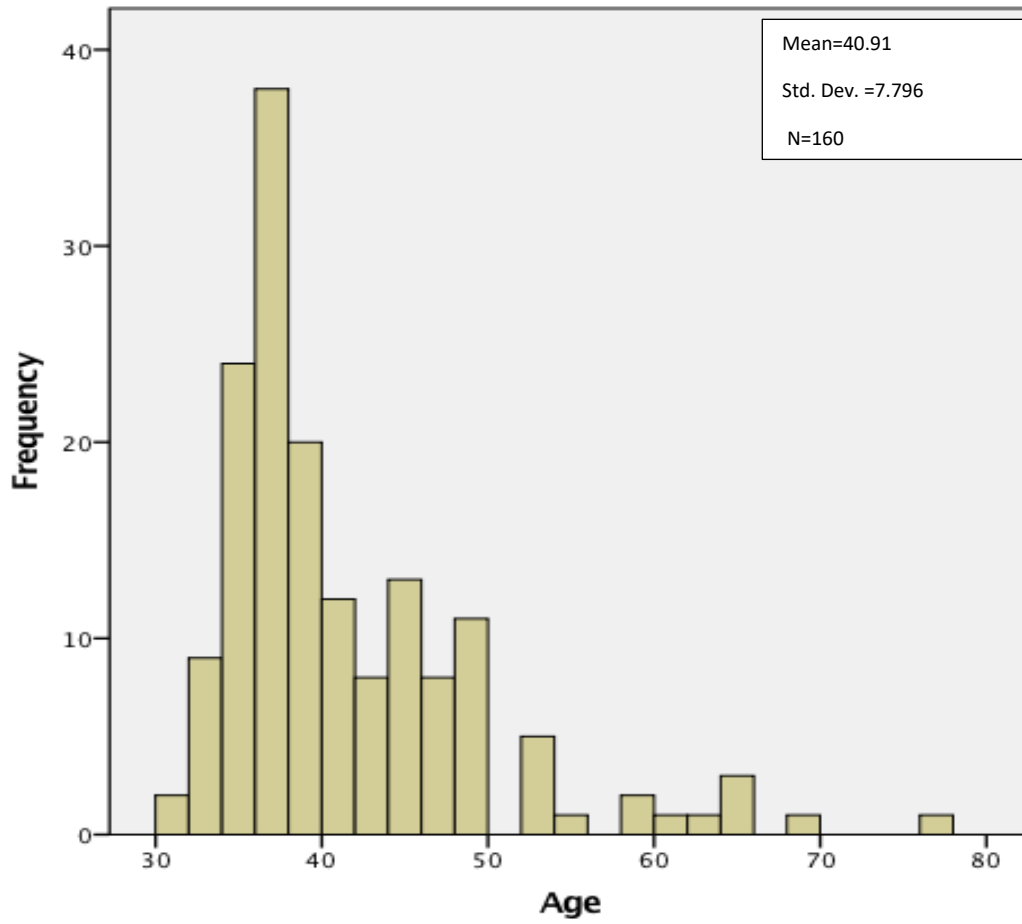


Figure 1: Age distribution

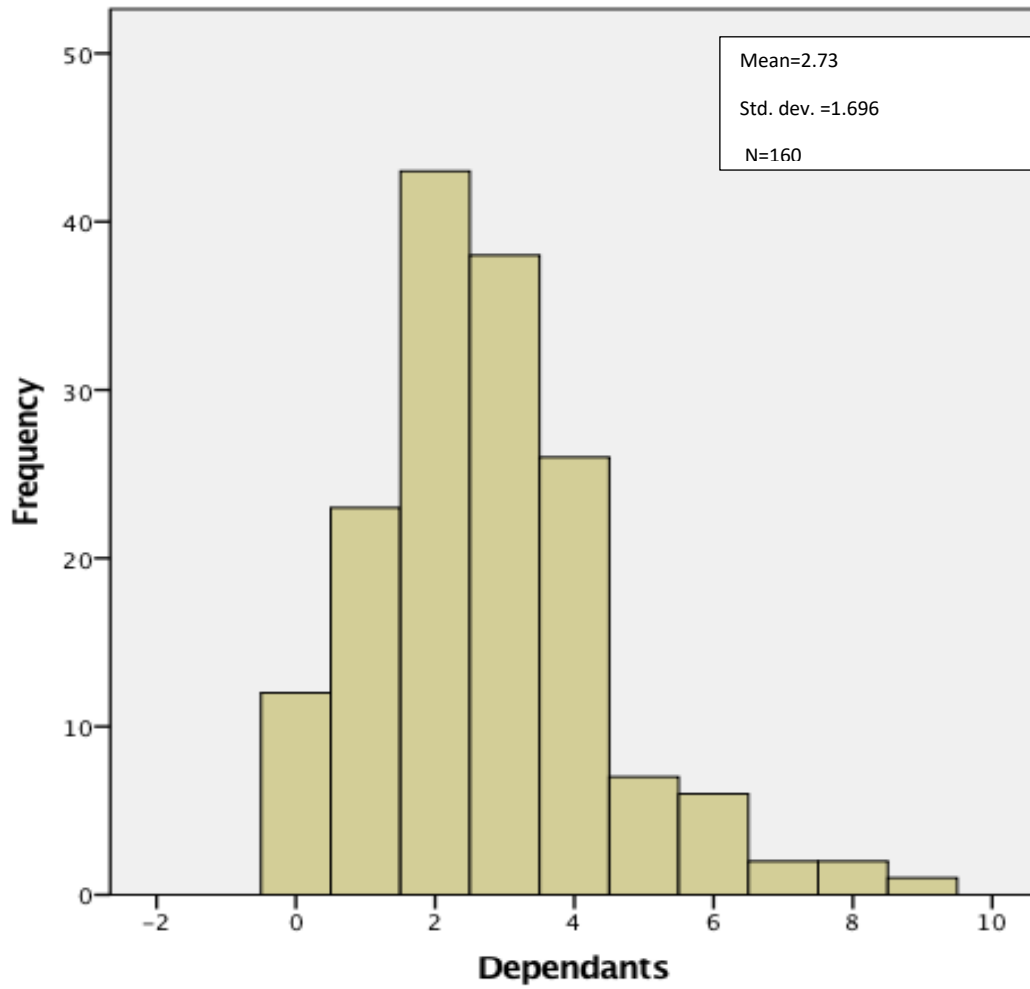


Figure 2: Distribution of numbers of dependants

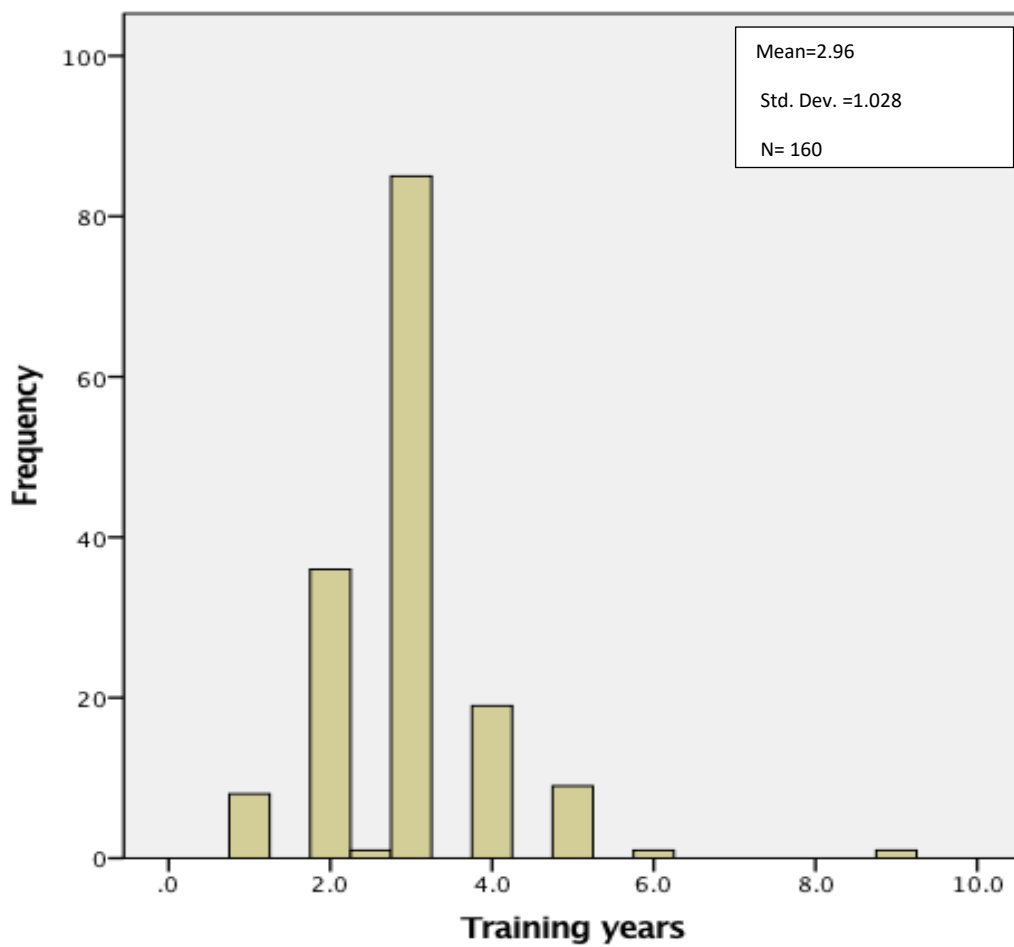


Figure 3: Distribution of years spent in training

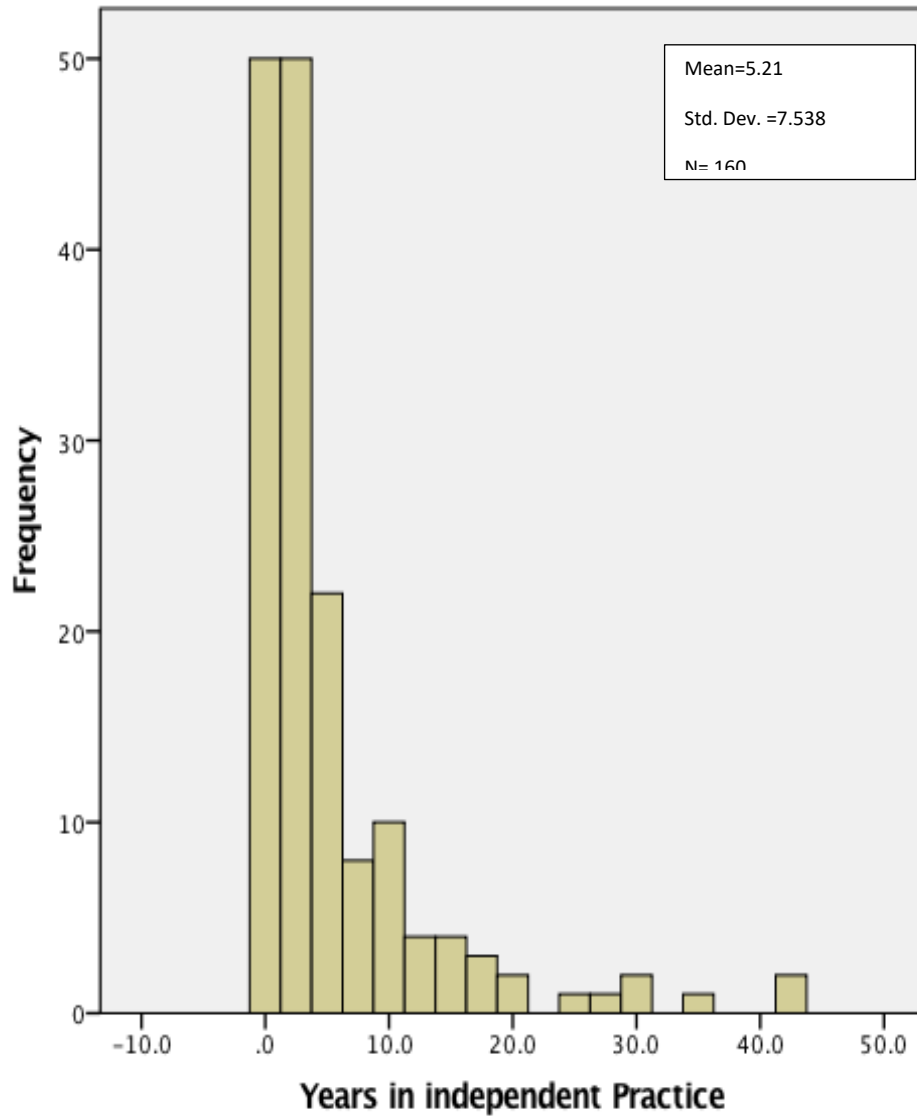


Figure 4: Distribution of time spent in independent practice

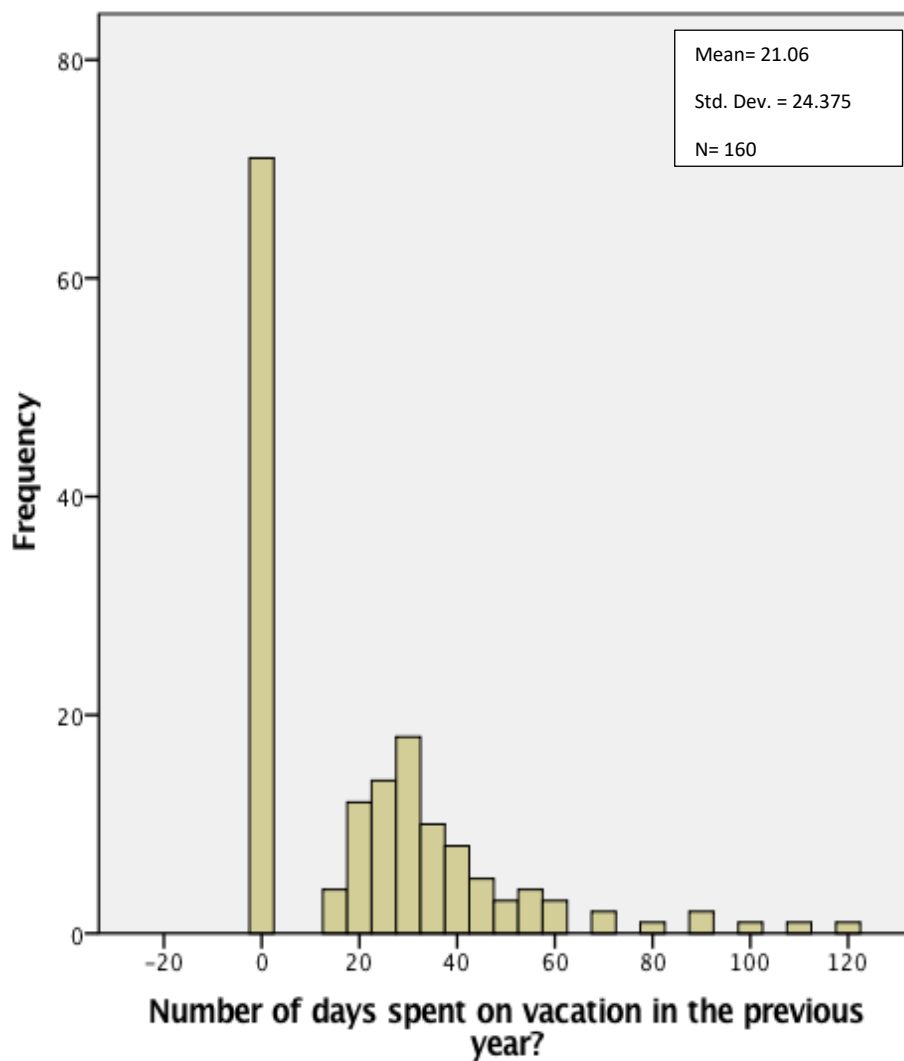


Figure 5: Distribution of the number of days spent on vacation the previous year

4.2 Prevalence of burnout syndrome and scores of the individual dimensions

The prevalence of burnout syndrome was determined to be 51.3%, leaving 48.7% of the participants categorized as non-burnt out. Some participants did not meet the criteria yet still had high scores in one or more dimensions necessitating the need to consider the overall score percentages in each dimension. 106 participants (66.3%) had high scores on the emotional exhaustion dimension and 54 (33.8%) had low scores. 38 participants (23.8%) had low scores on the personal accomplishment dimension whereas 122 (76.3%) scored high. Finally, 72 (45%) scored high on the depersonalization dimension and 88 (55%) low.

4.3 Binary regression analysis

In this study, as the first step to assessing the suitability of the binary logistic regression model to analyse the variables, the independent variables were considered and compared to the null hypothesis and produced a Chi-square value of 27.597 whose *p* value was 0.001 which qualified as statistically significant and therefore supported the use of the binary logistic regression model to predict burnout from the given predictor variables (Table 1).

Table 1: The omnibus model of coefficients (step1)

		Chi-square	Degrees of freedom	<i>p</i> -value.
Step 1	Step	27.597	8	.001
	Block	27.597	8	.001
	Model	27.597	8	.001

The variables included in the final model needed to be reduced due to the sample size and incidence of positive outcomes in order to minimize the chances of obtaining a type 1 error. Only variables with a strong theoretical basis were included from the available literature.

Vacation refers to participants who had taken vacation; *Equipment* refers to how participants responded to the question, ‘how often do you feel you don’t have the right equipment to carry out work to an appropriate standard?’ with the reference condition referring to participants who answered they often had the right equipment; *Team* refers to how participants responded to the question, ‘do you feel you have the right team around you to do your job?’ with the reference category referring to participants who answered they had team support; *Outcomes* refers to how participants responded to the question, ‘how often do you experience negative outcomes such as death or permanent disability?’ with the reference condition referring to participants who answered they experienced negative outcomes frequently; *Gender* - the reference category refers to males; *Background* refers to the position of being either a physician or non-physician anaesthetist with the reference category referring to non-physician anaesthetist; *Years in independent practice*, the reference category referring to participants who had some years in independent practice; Workload hours variable referred to self-reported number of hours worked each week (Table 2).

From the logistic regression output table, a number of observations can be deduced.

The two most statistically significant predictors (p value <0.05) were the availability of team support ($p=0.008$) and the background i.e. the non-physician or physician position ($p=0.019$).

For a unit increase in team support, the odds of being burnt out were lower by a factor of 0.344 (95% C.I. 0.16-0.76) i.e. odds ratio for an increase in team support were 0.344. It can be seen from the negative B coefficient that an increase in the team support variable was associated with a decrease in the dependent outcome.

Having a background of being non-physician was found to increase the odds of being burnt out by a factor of 3.936 (95% C.I 1.25-12.36).

The model could not find statistically significant predictive ability in the remainder of the variables as their p values were >0.05 (Table 2).

Table 2: The final logistic regression output table

Independent variables	B coefficient	Standard Error	<i>p</i> -value	Odds ratio	95% C.I. for Odds ratio	
					Upper	Lower
Vacation	0.47	0.37	0.20	0.63	0.31	1.3
Equipment	-0.35	0.41	0.38	1.42	0.64	3.2
Team	-1.07	0.40	0.01	2.91	1.33	6.39
Outcomes	-0.98	0.58	0.09	2.67	0.86	8.33
Gender	0.61	0.41	0.14	1.84	0.82	4.10
Background	1.37	0.58	0.02	3.40	1.25	12.36
Years in independent Practice	-0.03	0.02	0.20	0.97	0.92	1.02
Workload hours	-0.001	0.01	0.93	0.999	0.98	1.02

CHAPTER FIVE: DISCUSSION

The study found that the prevalence of burnout among anaesthetic care providers working in Zambian hospitals was 51%. This was defined as the combined presence of high scores in the emotional exhaustion dimension, high scores in the depersonalization dimension and low scores in the personal accomplishment dimension. This was relatively higher than that observed in the literature which reports a burnout prevalence among anaesthetists as being between 8 and 29.8%.

The dimensional scores when considered individually showed that 66.3% had high scores on EE, 45% scored high on DP and 23.8% had low scores on the PA. This compares and contrasts with an Egyptian study among 96 academic career anaesthetists at an Egyptian university hospital by Tarek *et al* (2012) which found 62.2% experienced high scores in EE, 56.1% had high DP scores, and 58.2% reduced PA. In South Africa, a similar study by Van der Walt *et al* (2016) among 124 physician anaesthetists at the University of Wits found a burnout prevalence of 21% and scores of the individual dimensions as follows: 45.2% had high scores in EE, 50%, high levels of DP and 46% had low levels of PA. The main difference in this study was that the number of anaesthetic care providers who scored low on the personal accomplishment dimension was lower than expected. When considering the overall burnout rate and the other two dimensions. This implied that majority of the anaesthetists were able to derive job satisfaction from the daily care of patients despite the challenging circumstances surrounding their work. It is not clear why this particular aspect of burnout seems to be relatively protected in Zambian anaesthesia providers, and other observational and qualitative research is needed to further explore this.

It is important, however, to note that the study population was not a homogeneous one as was notably the case in other studies. The anaesthetic provider population in Zambia which at the time of the study stood at an estimated 184 consisted of physician and non-physician anaesthetists. The vast majority were the non – physicians (approximately 86%) who were clinical officers with added 1-3 year training in anaesthetics. The study population was therefore influenced by the characteristics and circumstances surrounding the work environment of the non-physician anaesthetists. In addition, the gender balance was tipped towards males with only 26.9% of the group being females. This contrasted sharply with the Romanian study by Hagau and Pop (2012) in which 146 anaesthetists were studied for the

prevalence of burnout and female gender comprised 70.5% (103) of the study population. The observed gender imbalance, like the job position imbalance stated above, reflects the fact that the anaesthetic workforce in Zambia at the time of the study was largely male.

The use of a binary logistic model to analyse the data was statistically supported by the omnibus model of coefficients (Table 1) and, furthermore, the final logistic regression output (Table 2) revealed that the availability (or lack of) team support was found to be statistically significant ($p=0.008$). This was consistent with the study by Ranjana *et al* (2015) in which it was shown that burnout was considerably lower among anaesthetists working in teaching hospitals with established team structures than community hospitals where anaesthetists felt isolated. Similar observations could be drawn in Zambian hospitals where anaesthetic care providers working in rural locations often reported a lack of formal team structure to ease the work burden. Only 3.1% of the study population felt team support was adequate to carry out work to an appropriate standard. Working on improving team work, how professionals of different specialties work together and support each other and providing support for isolated anaesthesia providers should be a priority for Zambian healthcare, in order to maintain a healthy workforce that is able to effectively manage their patients. Effective team structures if put in place would allow more supervision, support for difficult cases, shared ideas, debriefing in case of critical incidents and planned breaks to enable each member recuperate.

The study showed that non-physician anaesthetists were more likely to suffer from burnout than their physician counterparts ($p=0.019$). In addition, according to Ministry of Health anaesthetic provider distribution pattern, physician anaesthetists were more likely to be in positions that had fairly well established team structures in teaching hospitals than non-physicians many of whom were isolated in rural or remote locations. It may be that the effect on burnout is actually not due to the different training of physicians and non-physicians, but rather that the effect on burnout is due to non-physician status being a proxy for isolated and unsupported rural practice. The data seems to support the training of more physician anaesthesia providers, who can strengthen the health care system, provide guidance and mentorship through outreach visits, tele-mentoring and continuous professional development. These physician anaesthesia providers are less likely to become burned out, although this may partly depend on where they are posted-further research may clarify this.

In this study, age, marital status, number of dependants kept at home, pay and weekly workload in hours ($p=0.932$) were not found to be statistically significant ($p>0.05$). This compared with

the South African study by Van der Walt *et al* (2016) which could not find a statistically significant prediction of burnout from age ($p=0.07$).

Frequent encounter with negative outcomes such as death and disability were commonly cited as source of much stress and eventual burnout among anaesthetists as pointed out by Gastao *et al* (2014) in their Brazilian study. However, this study could not find a statistically significant relationship between frequency of negative outcomes and burnout outcome ($p=0.37$). This could have been attributed to the relatively lower number (2.5%) of the study population who reported experiencing frequent negative outcomes as compared to those that rarely (81.3%) or never (3.1%) did.

In this study, the effect of equipment shortages was not statistically significant ($p=0.384$) yet equipment shortages were well documented as a problem faced by most developing country health sectors.

The study found that the years spent in independent practice were not statistically significant ($p=0.202$).

Interestingly, the study did not show an improvement in chances of not suffering from burnout with having taken a vacation the previous year. Yasmin *et al* (2011) mentioned the importance of adequate recuperation in reducing burnout yet equally stress the need for a change in work environment. This meant that rest alone was not enough if the stressors in the environment remained the same.

5.1 Conclusion

The prevalence of BOS among anaesthetic care providers in Zambian hospitals is high and of major concern. BOS among anaesthetists therefore poses a threat to patient safety, anaesthetist wellbeing and quality assurance at institutional level. Early detection and planned interventions are therefore crucial. The study identifies key areas upon which interventions could be planned namely; team support structures and training more physician anaesthetists. Both of these measures would reduce isolation and provide much needed support to less experienced or junior counterparts. Although pay, vacation, gender, frequent negative outcomes and weekly working hours were not found to be statistically significant in this study, their strong presence

in literature from other studies would suggest considering them in the planning of interventions to reduce BOS. In addition, due to the small number of anaesthesia providers in Zambia, this study may be underpowered to identify factors which actually are predictive, but with a relatively small effect size (odds ratio). Therefore, although it is safe to conclude that unsupported practice and, non-physician status are important factors to improve on, we should be cautious in dismissing the other factors which were not found to be significant but have been found to be relevant in other literature.

5.3 Recommendations

1. The study identified that isolated non-physician anaesthetists were at greater risk of BOS. Therefore, prioritizing hospitals in rural places or with less well developed team structures by improving numbers of anaesthetists would reduce the risk.
2. Every institution should have access to psychotherapy services to regularly assess at-risk personnel such as anaesthetists to detect BOS early.
3. Outreach and mentorship programmes to support non-physician anaesthetists.
4. Further studies to assess other potential independent variables and interventions

REFERENCES

- Ahola, K. and Hakanen, J. (2007). ' *Job strain, burnout and depressive symptoms: a prospective study among dentists* '. Journal of Affect Disorders, 104, 103–110.
- Alves, H. (2005) ' *Clinical and demographical aspects of alcohol and drug dependent physicians* .' Brazilian medical association Journal, 51(3):139-43.
- Aleksandra, M., Piotr, G., Hanna, M., and Zbigniew, G. (2014). ' *The prevalence of burnout syndrome in Polish anaesthesiologists* .' Anaesthesiology Intensive Therapy Journal, 46 (3): 155–161.
- Bria, M., Florina, M., Adriana, B., and Dan, D.(2014). ' *Maslach Burnout Inventory – General Survey: Factorial validity and invariance among Romanian healthcare professionals* .' Journal of Psychology, 1:103-111.
- Byrne, A., Oliver, M., Bodger, O., Barnett, W., Williams, D., Jones, A. and Murphy, A. (2010) ' *Novel method of measuring the mental workload of anaesthetists during clinical practice* .' British Journal of Anaesthesia, 105 (6): 767–71
- Cherniss, C. (1980) ' *Professional burnout in human service organizations* .' Journal of Psychology, 1:100-110.
- Edno, M. and Áurea, C. (2013) ' *Prevalence of burnout syndrome among anesthesiologists in the Federal District* .' Brazilian Anaesthesiology Journal, 117: 104-110
- Felton, J. S. (1998). ' *Burnout as a clinical entity—its importance in health care workers* '. Occupational Medicine, 48, 237–250.
- Firth-Cozens J. (1997) ' *Predicting stress in general practitioners: 10 year follow up postal survey* '. British Medical Journal, 315: 34-5.

- Freudenberger, H. (1974) '*Staff burnout.*' Journal Society, 30:159-165
- Gastão, F., Gupta, P., and Moore, R. (2014). '*Occupational Well-being in Anesthesiologists*'. Brazilian Journal of Anaesthesia, 25, 97-119
- Gitto, L. and Trimarchi, E. (2016) '*When passion becomes a nightmare: the burnout syndrome in healthcare workers. A case study.* Mediterranean Journal of Clinical Psychology, 5 :1-15
- Gupta, A. and Garg, R. (2015) '*Professional Burnout in Anaesthesia and Critical Care - How to Decrease it*'. Journal of Anesthesia and Critical Care 2(3): 175-188
- Hodges, C., Mijumbi, M., McCormick, I. A., Okello, B. A. and Walker, I.H. (2007) '*Anaesthesia services in developing countries: defining the Problems.*' Journal of Anaesthesia, 62, 4-11.
- Khetarpal, R., Veena, C., Jagjit, K. and Ashish, V. (2015) '*Occupational stress in Anaesthesiologists and coping strategies*'. International Journal of Scientific Study, 3(6):188-191.
- Kemphorne, P., Morriss, W.W., Mellin-Olsen, J., and Gore-Booth J. (2017) '*The WFSA Global Workforce Survey in Anaesthesia and Analgesia*'. 125(3):981-990
- Maslach, C. and Jackson, S.E. (1986) '*Maslach Burnout Inventory Manual*'. 2:1-5.
- Maslach, C. and Jackson, E. (1981) '*The measurement of experienced burnout.*' Journal of Occupational Behaviour, 2: 99 -113
- Moradi, Y., Reza, H.B., Shahla, A., and Yazdandoost, M. (2015) '*Prevalence of Burnout in residents of Aneesthesiology: A systematic review and meta-analysis.*' Medical Journal of the Islamic Republic of Iran, 29: 23-54

National Institute for Health and Care Excellence. Promoting Mental Wellbeing at Work. NICE, 2009. <https://www.nice.org.uk/guidance/ph22/resources/mental-wellbeing-at-work-1996233648325>

Nicolaas, V., Juan, S. and Perrie, S. (2015) '*Burnout among anaesthetists in South Africa*', Southern African Journal of Anaesthesia and Analgesia, 21(6): 169-172

Probst, H., Griffiths, S., Adams, R. and Hill, C (2012) '*Burnout in therapy radiographers In the UK*'. British Journal of Radiology, 85: 760-765.

Ranjana, K., Veena, C., Jagjit, K., Ashish, V., (2015) '*Occupational Stress in Anesthesiologists and Coping Strategies.*' A Review Journal of Scientific Study, 3(6):187-192.

Schaufeli, W. and Enzmann, D. (1998) '*The burnout companion to study and practice: A critical analysis.*' 1: 22-34.

Shanafelt, T., Balch, CM., Bechamps, G., Russell, T., Dyrbye, L. and Satele, D. (2010) '*Medical errors among American surgeons.*' Annals of Surgery, 251(6): 995-1000

Shidhaye, R., Divekar, D., Dhulkhed, V., Goel, G. and Shidhaye, R. (2011) '*Evaluation of stressors and coping strategies in Indian anaesthesiologists.*' Indian Journal of Anaesthesia, 55:193-198

Snell, D. and Bonnet, P. (2014) '*AABBI report on Safe obstetric anaesthesia course in Zambia*' World Federation of Societies of Anaesthesiologists Journal, 25: 1-3

Tarek, S. and Ragaa, E. (2013) '*Job Stress and Burnout among Academic Career Anaesthesiologists at an Egyptian University Hospital.*' Sultan Qaboos University Medical Journal, 13 (2): 287-295

Yasmin, A., Abdulghafour, A. and Anwar, M. (2011) '*Burnout syndrome among physicians working in primary health care centers in Kuwait.*' Alexandria Journal of Medicine 47: 351–357

APPENDICES

Appendix 1: PARTICIPANT INFORMATION SHEET

Burnout syndrome among anaesthetists in Zambia

A quantitative analytical cross sectional study looking at the prevalence of Burnout

Syndrome among anaesthetists in Zambia

Principal Investigator:	Dr. Mbangu C. Mumbwe	+260 977348176
Supervisors:	Dr. Dylan Bould	+1 613-737-7600
	Dr. Christopher Chanda	+260 955180402

Introduction

Mbangu Mumbwe is a post graduate MMED Anaesthesia and critical care candidate at the University of Zambia, school of medicine.

This study seeks to determine the prevalence of burnout syndrome among anaesthetic care givers in Zambia. As an anaesthetist, you constitute the group of professionals that this research focuses on.

Please read this participant information sheet and consent form carefully and ask as many questions as you wish before deciding whether to participate in this research or not.

Background, Purpose and Design of the study

Burnout syndrome is a common phenomenon amongst specialties providing around the clock care to patients such as anaesthesia. It has been shown to threaten delivery of quality health service, patient safety and the wellbeing of anaesthetists who are at risk. Unfortunately, it has not received the attention it deserves and therefore little is known about the prevalence and sociodemographic or work factors that may heighten this risk. This study aims at identifying, exposing and quantifying the presence or absence of burnout syndrome and its associated risk factors among anaesthetists in Zambia.

Study Procedures

This is a questionnaire-based study that aims to gain insight into the prevalence of burnout syndrome amongst anaesthetists and the various sociodemographic and work related factors that may alter the pattern of burnout seen. The questionnaire is in two parts which aim to cover the above-mentioned study aims. The questionnaire will require approximately 10-15 minutes to fill at your own convenience.

Potential risks

There are no known risks

Potential benefits

You may not receive direct benefit from this study. However, your participation in this research could allow a better understanding of the anaesthetist's working conditions and form a crucial basis for evaluating changes in the work environment and improve patient safety.

Withdrawal from study

Your participation in this research is not obligatory. You have the right to withdraw from the study at any point. You may cancel this consent at any time. If you withdraw your consent, the investigator will no longer use and disclose your personal information under the consent for this study. You have the right to check your study records and request changes if the information is not correct.

Confidentiality

All personal identifying information will be kept confidential, unless release is required by law. You will not be identifiable in any publications or presentations resulting from this study. The link between your name and the independent study number assigned to you will only be accessible by Dr. M. Mumbwe. The link and study files will be stored separately and securely. All paper records will be stored in a locked file and/or office.

Voluntary Participation

Your participation in this study is voluntary. If you choose not to participate, your decision will not affect your current or future employment in the ministry of health. You will not have any penalty or loss of benefits to which you are otherwise entitled.

Questions about the Study

For any further clarification, you may contact Dr. Mumbwe on the number given above or by email: acedafox@yahoo.com, or by standard mail addressed to:

Mbangu Mumbwe,
C/O Anaesthesia Department, UTH,
Nationalist road, Lusaka
Zambia.

Or please contact:

The Chairperson,
UNZABREC.
Telephone: 260-1-256067
Ridgeway Campus, Lusaka, Zambia
P.O. Box 50110

Appendix 2:

CONSENT FORM

Burnout syndrome among anaesthetists in Zambia

A quantitative analytical Cross sectional study looking at the prevalence of Burnout

Syndrome among anaesthetists in Zambia

Consent to Participate in Research

I understand that I am being asked to participate in a research study about burnout syndrome among anaesthetists in Zambia. This study has been explained to me by _____.

I have read this 2-page Participant Information Sheet and Consent Form (or have had this document read to me). All my questions have been answered to my satisfaction. If I decide at a later stage in the study that I would like to withdraw my consent, I may do so at any time.

I voluntarily agree to participate in this study.

A copy of the signed Information Sheet and Consent Form will be provided to me.

Signatures

Participant's Name & Signature

Witness

Date

Investigator Statement (or Person Explaining the Consent)

I have carefully explained to the research participant the nature of the above research study. To the best of my knowledge, the research participant signing this consent form understands the nature, demands, risks and benefits involved in participating in this study. I acknowledge my responsibility for the care and well-being of the above research participant, to respect the rights and wishes of the research participant, and to conduct the study according to applicable Good Clinical Practice guidelines and regulations.

Name of Investigator

Signature of Investigator

For any further clarification, you may contact Dr. Mumbwe on +260 977348176 or by email: acedafox@yahoo.com, or by standard mail addressed to:

Mbangu Mumbwe,

C/O Anaesthesia Department, UTH,
Nationalist road, Lusaka
Zambia.

Or please contact:

The Chairperson,
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Telephone: 260-1-256067
Ridgeway Campus, Lusaka, Zambia
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Appendix 3: DATA COLLECTION TOOLS

Part 1: Basic demographic data

Date
Gender
Age
Marital status
Children and/or relatives looked after at home

Professional data

Position held

Time spent in training

Time spent in independent practice

Estimated weekly anaesthetic workload in hours

Type of employment

How often do you see patients have negative outcomes at work such as death or permanent disability?

How many times in the last month have you seen negative outcomes?

A)more than usual B) less than usual C) same as usual

How often do you feel that you don't have the equipment to carry out your work to an appropriate standard?

- 1 – never
- 2 – rarely – about 10% of the time
- 3 – occasionally– about 30% of the time

- 4 – sometimes– about 50% of the time
- 5 – frequently– about 70% of the time
- 6 – usually– about 90% of the time
- 7 – every time

How often do you feel you don't have the right team around you to carry out your work to an appropriate standard?

- 1 – never
- 2 – rarely – about 10% of the time
- 3 – occasionally– about 30% of the time
- 4 – sometimes– about 50% of the time
- 5 – frequently– about 70% of the time
- 6 – usually– about 90% of the time
- 7 – every time

How often are you supervised by a senior colleague?

How often do you feel like you do cases you are not comfortable with without support?.....

Do you feel you receive your pay on time?

Do you feel your pay is at par with the service rendered?

Number of days spent on vacation in the previous year?

Part 2: the Maslach Burnout Inventory Human Services Survey

For each question, indicate the score that corresponds to your response

SECTION A=EMOTIONAL EXHAUSTION, SECTION B=PERSONAL ACCOMPLISHMENT, SECTION C=DEPERSONALIZATION

Questions	Never	A few times per year	Once a month	A few times per month	Once a week	A few times per week	Every day
SECTION A	0	1	2	3	4	5	6
I feel emotionally drained by my work.							
I feel used up at the end of the workday							
I feel fatigued when I get up in the morning and have to face another day on the job							
Working with people all day is really a strain for me							
I feel burned out from my work							
I feel frustrated by my work.							
I feel I work too hard at my job.							
Working with people directly puts too much stress on me							
I feel like I'm at the end of my rope.							
Total score – SECTION A							

Questions	Never	A few times per year	Once a month	A few times per month	Once a week	A few times per week	Every day
SECTION B	0	1	2	3	4	5	6
I can easily understand how my recipients feel about things							
I deal very effectively with the problems of my recipients							
I feel I'm positively influencing other people's lives through my work							
I feel very energetic							
I can easily create a relaxed atmosphere with my recipients							
I feel exhilarated after working closely with my recipients							
I have accomplished many worthwhile things in this job							
In my work, I deal with emotional problems very calmly							
Total score – SECTION B							

Questions	Never	A few times per year	Once a month	A few times per month	Once a week	A few times per week	Every day
SECTION C	0	1	2	3	4	5	6
I feel I treat some recipients as if they were impersonal ‘objects							
I’ve become more callous toward people since I took this job							
I worry that this job is hardening me emotionally							
I don’t really care what happens to some recipients							
I feel recipients blame me for some of their problems							
Total score – SECTION C							