ORIGINAL ARTICLE

Burnout among Anaesthesia Providers in Sub-Saharan Africa: A Scoping Review

Alhassan Zynat, Atiku Mamuda, Salahu Dalhat, Abdullahi Mustapha Miko M, Alhassan Datti Mohammad

Departments of Anaesthesia, Aminu Kano Teaching Hospital, Kano, Nigeria.

ABSTRACT **Background:** Anaesthesia providers are a unique population of healthcare workers because of the specialised nature of their work in the perioperative period. Sub-Saharan Africa (SSA) with its large proportion of Low-and Middle-Income Countries (LMICs) has limited manpower and resources. This scoping review was aimed at investigating the prevalence of burnout amongst Anaesthesia providers in SSA from previous research, to identify factors related to burnout, consequences of burnout, and possible interventions to mitigate burnout among SSA anaesthesia providers.

Methodology: This is a scoping review of research in the last ten years on burnout amongst SSA anaesthesia providers. Peer-reviewed studies published between the years 2013 to 2023 were included in this study. Google Scholar, Research gate, National Library of Medicine and Web of science databases were searched for eligible studies. Eleven were identified.

Results: The synthesized prevalence of burnout was 38.05%. The subscales of high Emotional Exhaustion (EE) of 50.37%, high depersonalisation (DP) 44.05%, and moderately low Personal Accomplishment (PA) of 35.7% were found. Several factors were identified as impacting Anaesthesia providers in SSA such as their years of experience, age of the Anaesthesia provider, and their work environment. Data was limited on the outcomes of burnout, and no studies on the interventions aimed at ameliorating burnout amongst SSA Anaesthesia providers.

Conclusion: Findings highlight the need for more research on burnout among SSA anaesthesia providers, and an urgent need for the implementation of interventions to mitigate burnout in SSA anaesthesia providers.

Keywords: Burnout, Physician Anaesthetist, Non-physician anaesthetist, Anaesthesia providers, Sub-Saharan Africa.

Correspondence: Atiku Mamuda
Phone number: +2348052069901
Email: dratiku1963@yahoo.com

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INTRODUCTION

The term burnout was coined by an American psychologist Herbert Freudenberger in the 1970s, where he used the term to describe the implications of severe stress in helping professionals.[1] It is a syndrome seen in professions that care for others, such as healthcare workers, teachers and social workers.

The World Health Organization's ICD-11 defines burnout as a syndrome that results from chronic workplace stress that has not been successfully managed, and is characterized by three main components; feelings of energy exhaustion or depletion (Emotional Exhaustion, EE), increased mental distance from one's job (Depersonalisation, DP), and reduced professional efficacy (low Personal Accomplishment, PA) .[2] Healthcare professionals are exposed to a lot of stress at work, with chronic stress leading to emotional exhaustion and energy depletion.

Some consequences of Healthcare professionals' burnout are objectification of their patients, negative attitude towards their colleagues and their profession, as well as increased risk of medical errors. Fatigued and emotionally drained anaesthesia providers are more likely to make errors in medication dosages, monitoring, and other critical tasks, putting patients at risk.[3,4]

At an individual level, burnout has been linked to mood disorders, substance abuse, depression and even suicide.[3] Prolonged burnout can contribute to the development of mental health conditions such as anxiety, depression, post traumatic stress disorder amongst anaesthesia providers. Romani et al[4] characterized burnout as a serious disorder that could lead to devastating personal and professional consequences.

Burnout not only affects the individual, but has both societal and organizational implications. Medical errors, poor physician performance, disharmony among team members affecting team work, are some of the organizational consequences of teamwork.[3] This ultimately alters the quality of care delivered to patients, thus compromising patient safety.

Anaesthetists are a unique form of healthcare professionals as they work in various settings ranging from the operating theatres, critical care units, emergency roms, radiology units, endoscopy units amongst others. Anaesthesia providers play an important role in healthcare by administering anaesthesia during surgical operations and other procedures, thus ensuring patient safety and comfort. They also handle emergencies, and are involved in the resuscitation and care of the critically ill. Due to the high stress situations they are exposed to, high workload, and limited resources, Anaesthesia providers in Sub-saharan Africa are prone to develop burnout[5,6]. The consequence of burnout among Anaesthesia providers is therefore grave.

In Sub Saharan Africa these healthcare professionals face unique challenges that contribute to high levels of burnout. Being an Anaesthetist is associated with a lot of stress and high work load, plus low number of providers to deal with the high burden of disease in SSA.[6]

Burnout among healthcare professionals has a reported prevalence of more than 50% in the United States of America.[5] Despite having ample resources and advanced infrastructure, anaesthesia providers in developed nations also face challenges that contribute to high levels of burnout. These challenges are even more accentuated in developing countries where there is limited manpower and resources

The Anaesthesia workforce in Sub-Saharan Africa mainly consists of an anaesthetist, usually a consultant, resident doctors, and nurse anaesthetists. nurse anaesthetist, also known as non-physician anaesthetists form a major part of the global anaesthesia workforce. An Anaesthesia workforce survey conducted by the World Federation of Societies of Anaesthesiologists (WFSA) between the years 2015 and 2016 illustrated the distribution and training of physician anaesthesia providers and non-physician anaesthesia providers globally was conducted. A ratio of 5 specialist anaesthesia providers (Anaesthesiologist) per 100,000 population has been recommended as the reasonable target by the WFSA. The density of physician anaesthesist to patient levels were particularly low in African and South-East Asian countries. South Africa was the only African country that had a ratio of more than 5 per 100,000 with all other African countries ranking below this range .[7] Similarly, the Lancet Commission on Global Surgery has recommended a minimum density of surgical specialists, anaesthetists, and obstetricians of 20 to 100,000 population.[8] However, in contrast with what the WFSA recommended, their recommendation didn't give the exact proportions for each specialist per population. Davies and colleagues recommended 4 anaesthesiologists per 100,000 population by using best-fit curves for Maternal Mortality Ratio and physician anaesthesia Providers.[9] Despite the recommendations on the numbers of specialists per population, there is limited data on the available manpower in Sub Saharan Africa. A study on the existing surgeon to anaesthetist ratio in West Africa was found to be 49:1.[10]

The shortage of Anaesthetists in Sub-Saharan Africa is mostly on account of loss to brain drain. This has further increased the burden on the anaesthesia providers available. In 2015 it was estimated that worldwide, there were 550,134 Anaesthesiologists (IQR 529,008-572,916), and 1,112,727 specialist surgeons (IQR 1,059,158-1,117,912). Of these, only 15% of these anaesthesiologists were in LMICs.[8] A similar survey in 2018 also showed that of the global 436,596 Physician anaesthetists in that year, only 12% worked in Low and Middle Income Countries.[6] This workforce shortage has lead to excessive workload on the available anaeasthesia providers, more frequent call duties, with minimal support, thus making work conditions even more unfavourable.

The purpose of this scoping review is to explore what is known about burnout among anaesthesia providers in Sub-Saharan Africa, to guide future research on this population, explore its contributing factors, and measures to alleviate burnout.

Tools used to Measure Burnout

There are various tools used to measure burnout, with the Maslach Burnout Inventory considered to be the gold standard and the most widely used tool.[11] It was developed in the late 1970's and modified into MBI-Human Services Survey(MBI-HSS) for individuals working in healthcare, and MBI-Educators Survey (MBI-ES) for individuals working in the educational sector. The MBI-General Survey was also later developed when burnout was noticed in individuals who were not in people oriented careers. All versions of the MBI have 3 subscales; Emotional Exhaustion (EE), Depersonalization (DP), and Personal Accomplishment (PA), but have variable number of items measured. The MBI-HSS and MBI-ES measure twenty two items, while the MBI-GS measures sixteen items.[12] For medical personnel, another form of MBI-HSS was adapted; the MBI-HSS-MP.

Burnout is said to be absent when the cumulative score is less than 20, possible burnout when cumulative score is between 21-40, mild burnout when the score is between

41-60, moderate burnout between 61-80, and high burnout between 81-100.

Table I: Maslach Burnout Scale Severity Score

Burnout severity	Cumulative score
Burnout absent	<20
Possible burnout	21-40
Mild burnout	41-60
Moderate burnout	61-80
High burnout	81-100

However, the severity may also be further classified based on the MBI Sub scales[13];

Table II: Maslach Burnout Inventory Severity Subscale Scores[13].

Subscale	Category	Cut-off scores
Emotional Exhaustion (EE) Score 0-54	High	>27
	Moderate	19-26
	Low	0-18
Depersonalisation (DP) Score 0-30	High	>10
	Moderate	6-9
	Low	0-5
Personal Accomplishment (PA) Scores 0-48	High	0-33
	Moderate	34-39
	Low	>40

METHODOLOGY

This is a scoping review of literature which studied burnout amongst anaesthesia providers in the past ten years. This review was able to gather and synthesize research evidence on current literature on burnout among anaesthesia providers in Sub-Saharan Africa. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework guidelines was used to perform this scoping review.

The following questions guided this scoping review;

1. What is the prevalence of burnout among anaesthesia providers in Sub-Saharan Africa?
2. What are the factors that contribute to burnout among anaesthesia providers in Sub-Saharan Africa?
3. What interventions could alleviate burnout among anaesthesia providers in Sub-Saharan Africa?

Search Strategy

The following electronic databases were used to search for literature; Google Scholar, PubMed, National Library of Medicine (NLIM), Research Gate and Web of Science. The keywords burnout, anaesthesia, sub-saharan africa were used. Science direct was used to search for grey literature.

Eligibility Criteria

Papers on anaesthesia provider burnout included in this scoping review were all in English language, published between the years 2013 to 2023, involved human participants, and were all peer-reviewed. All included research were from Sub-Saharan Africa. Editorials and commentaries were excluded. Disserartions, scoping reviews and systematic reviews were also excluded from the study, but their reference list was also screened for inclusion.

Selecting Sources

All sources were downloaded from the above listed databases into EndNote reference manager and duplicates were deleted. Titles and abstracts were screened against the eligibility criteria, and ineligible sources were excluded from the review. Full text screening was then performed, and more ineligible sources were further excluded. The reference lists of included studies were also screened to identify further eligible sources.

Data Charting Process

Data were extracted from the included articles and entered into a Microsoft Word table. The following data were extracted; title, authors, year of publication, country of publication, sample size, study population, tool used to measure burnout, burnout prevalence, burnout subscale scores, factors associated with prevalence, and consequences of burnout.

Synthesis of Results

A quantitative synthesis specific to the prevalence and degree of burnout was calculated based on the number of included articles that reported raw scores for Maslach Burnout Inventory (MBI) and its subscales. A mean score of the prevalence of burnout was calculated by hand, by totaling the raw scores and dividing by the total number of studies. For the burnout subscales, the mean score was also calculated by hand across studies for each subscale and divided by the total number of studies that included a raw score for that subscale.

RESULTS

A total of eleven studies met the inclusion criteria for this scoping review**.** Most were sourced from Google Scholar and PubMed.

Distribution: The country with the highest number of studies was South Africa, with a total of five. The remaining six were from Ethiopia, Ghana, Morocco, Rwanda, Nigeria, and Zambia.

Three of these studies were conducted among both physician and non-physician anaesthetists, six studies among physician anaesthetists alone, and 2 conducted on only non-physician anaesthetists.

Two studies compared burnout amongst anaesthesia providers in the public health sector versus those working in the private sector.

Most sources were published in 2023 (36%), 2022 (27%), and 2020 (18%), with the least published in 2015 and 2021 (9% each). There were no eligible studies published in 2013, 2014, 2016, 2017, 2018, and 2019.

Nature of Studies: The tool used to measure burnout was mainly the Maslach Burnout Inventory. Amongst the included studies, five used the Maslach Burnout Inventory[14,15], 3 utilised its modification Maslach Burnout Inventory Human Services Survey (MBI-HSS),[16,17,18] and 2 used the Maslach Burnout Inventory Human Services Survey for Medical Personnel (MBI-HSS MP)[19,20]. Only one study used the Oldenburg Burnout Inventory to measure burnout.[21]

Table III represents the characteristic of studies included in the study. The prevalence obtained from each study is in the fifth column.

Table III: Characteristics of Studies included in the Scoping Review

Author(s), Year, Country	Sample Size and Study Population	Study Design	Burnout Measuring Tool	Prevalence
Allie L., et al.[14] 2023, South Africa.	139 anaesthesia providers (medical officers, registrars, and consultants) from 2 hospitals in KwaZulu Natal, South Africa.	Prospective descriptive analytical and observational study	MBI	18.7% of respondents had extreme burnout.
Benhamza et al.[15] 2023, Morocco	396 anaesthesiologists and nurse anaesthetists from all hospitals in Morocco	Multicentre cross-sectional study	MBI	83% PhA, 95% NPA (average 89%)
Coetzee et al.[19] 2020, south Africa.	498 anaesthesia Providers working in the Private and Public sectors		MBI-HSS(MP), Areas of Worklife Survey	22.7%
Mamorobela et al.[23], 2023, South Africa	150 doctors; 19 anaesthetists.	Cross-sectional study	MBI	36%
Mumbwe et al.[16], 2020, Zambia	160 physician and non-physician anaesthesia providers in Zambia.	Cross-sectional study	MBI-HSS	51.3%
Nazeema et al.[20], 2023, South Africa	327 doctors; 34 anaesthetists	Cross-sectional study	MBI-HSS(MP)	46.2% of respondents (Anaesthetists made up 10.1% of study population).
Nwosu et al.[21],2022, Nigeria.	129 physician anaesthetists who attended the NSA AGM	Cross-sectional study	Oldenburg Burnout Inventory	68.3%
Opoku et al.[22], 2022, Ghana	391 nurses; 43 anaesthesia and intensive care nurses	Cross-sectional study	MBI	
Tuyishime et al.[24] 2022, Rwanda	137 anaesthesiologists, resident doctors and Non-physician anaesthetists from 4 teaching hospitals	Multicentre cross-sectional study	MBI	26.3%,
Van der walt et al.[18], 2015, South Africa.	205 physician anaesthetists in the private and public sectors.	Cross-sectional, descriptive, prospective, contextual study.	MBI-HSS	High level of burnout in 21% of respondents.
Yetneberk et al.[17], 2021, Ethiopia	650 non-physician anaesthetists	Cross-sectional study	MBI-HSS	17.1%

MBI- Maslach Burnout Inventory; MBI-HSS- Maslach Burnout Inventory-Human Services Survey; MBI-HSS(MP)- Maslach Burnout Inventory-Human Services Survey for Health Personnel; NSA- Nigerian Society for Anaesthetists; NPA- non-physician anaesthetist; PA-Personal Accomplishment; PhA-physician anaesthetist.

Synthesised Findings

The mean burnout score from this review was 38.05%. The mean of the reported raw scores for Emotional Exhaustion was 50.37, for Depersonalization it was 44.05, and 35.7 for Personal Accomplishment. Table IV illustrates burnout tools used in the various studies, as well as the subscale scores obtained.

Table IV: Burnout Tools Used and the Subscale Scores Obtained

Author	Number of Anaesthesia Providers	Burnout Tool Used	Burnout Subscale Scores
Allie et al.[14]	139	MBI	High EE-42% High DP-38% Low PA-52%
Benhamza et al.[15]	396	MBI	High EE-48% High DP-43.2% Low PA-21%
Coetzee et al[19]	489	MBI-HSS(MP)	22.7% of respondents had clinical burnout; Extreme burnout in 10.6% High EE+high cyinism-7.4% High EE+low efficacy-4.6%
Mumbwe et al.[16]	184	MBI-HSS	High EE-106(66.3%, CI 58.7%-73.2%) High DP-72(45%, CI 37.4%-52.7%) Low PA-38(23.8%, CI 17.7%-30.8%)
Nazeema et al.[20]	327 doctors; 34 anaesthetists	MBI-HSS	Low PA in anaesthesia residents.
Van der walt et al.[18]	205	MBI-HSS	EE-45.2%, DP-50%, PA-46%.

Anaesthesia Provider Personal Factors: There were various results on the association between burnout and Anaesthetic providers' age, sex, and years of experience. Young age was associated with burnout in four of the studies. Participants aged between 30-40 years had higher emotional exhaustion (OR 2.214 CI: 1.462-3.352) compared to their older counterparts demonstrated by Benhamza et al. in Morrocco.[15] It was also demonstrated by Nazeema et al and Coetzee in South Africa, and Opoku et al in Ghana that younger aged participants had higher levels of burnout.[19,20,22] Most of the studies did not show an association between the respondents' sex and burnout. Only 2 studies demonstrated that females had higher burnout compared to their male counterparts.[14,22] None of the studies demonstrated a relationship between an individual's marital status and burnout.

Most of the studies demonstrated fewer years of work experience were associated with more burnout.[14,15,17,19,22] Resident doctors, interns and medical officers had more burnout, while older experienced anaesthetist had less burnout.[14,20] However, one study demonstrated no association between years of practice and burnout.[23]

No association between respondents' demographic data and burnout was found in three of the studies.[16,21,23]

All but one of the studies related race with burnout. Caucasians had more burnout compared to Africans and Asians.[20]

Two of the studies showed an association between burnout and psychiatric disorders.[20,21] In the Nigerian study by Nwosu et al[21] respondents that had depression had high levels of burnout (p=0.001), while Nazeema et al[20] in Zambia showed an association between a psychiatric diagnosis and burnout (RR 1.49; CI 1.13-1.97), particularly anxiety disorders and depression.

The study in Zambia demonstrated that non-physician anaesthetists had more burnout compared to their physician anaesthetist counterparts.[16]

Table V. Factors related to burnout

Author(s), Year, Country	Factors Associated with Burnout
Allie L., et al.[14] 2023, South Africa.	Excellent sleep quality was associated with low emotional exhaustion scores and low depersonalisation scores. Exam preparation was associated with high emotional exhaustion. Female gender had more Emotional Exhaustion compared to their male counterparts (49% vs 29%, p<0.05).
Benhamza et al.[15] 2023, Morocco	Age between 30-40 years Years of practice less than 25 years Being part of an on-call system Working in a primary health care centre Career choice regret Inability to take vacations
Coetzee et al.[19] 2020, South Africa.	Comparison between anaesthetists in the private and public sector. Extreme burnout noticed more in those practicing in the public sector (18%) compared to those working in private facilities (7%),
Mumbwe et al.[16], 2020, Zambia	Anaesthesia providers perceived that they did not have the right team around them to do their job (OR 2.91, 95% CI, 1.33-6.39) Being a non-physician anaesthetist (OR 3.4, 95% CI 1.25-12.34) was associated with higher levels of burnout
Nazeema et al.[20], 2023, South Africa	Increased burnout risk noticed in younger age anaesthesia providers, caucasian race, being a resident doctor, having a prior psychiatric diagnosis of anxiety and or depressive disorder.
Nwosu et al.[21],2022, Nigeria.	Age more than 43 years Being a resident doctor
Tuyishime et al.[24] 2022, Rwanda	Lacking the right team around to support with the job, Lack/availability of essential drugs and equipment
	frequency of seeing patients with negative outcomes were associated with burnout.
Van der walt et al.[18], 2015, South Africa.	Higher burnout among females, age group 30-40 years, Resident doctors and working experience between 4-8 years. (Not statistically significant)
Yetneberk et al.[17], 2021, Ethiopia	Work experience less than 5 years (p<0.001), Parenthood (p<0.01), consumption of more than 5 alcoholic drinks per week (p<0.002), anaesthetists with academic roles (p=0.01).

Work Environment: Some studies showed that respondents work environment has impact on individual well being. Lack of the right team, drugs and equipment was demonstrated to be related to burnout in two studies.[16,24] The lack of support from management, fewer number of staff on duty were found to be related to burnout in Ghana in the research by Opoku et al.[22]

Anaesthetists working in Primary Health Centers had more burnout compared to those working in University Hospitals and Regional Hospital centers in one of the studies.[15] Similarly, Anaesthetists working in public health sector had more burnout compared to their colleagues working in the private health sector.[19]

Also individuals who work entails staying overnight while being on-call system, and lack adequate rest following the call had high levels of burnout (Benhamza, 2023) .[15] Individuals who perceived their salaries were insufficient also had more burnout.[15] Residents preparing for examinations were also demonstrated to have high burnout.[14]

Work Outcomes: Burnout has negative impact on an individual's performance at work. This scoping review revealed some of the impact burnout had on the Anaesthetist performance and patient safety.

Table VI: Consequences of Burnout on Anaesthesia Provider and Patient Safety

Author(s), Year, Country.	Consequences/Mishaps
Benhamza et al.[15] 2023, Morocco	Sleep disorders in 42.7% of participants, 22.5% had toxic habits (use of anaesthetic products 4.8%, cannabis 13.63%, alcohol 32%), Suicidal ideation (0.25%)
Yetneberk et al.[17], 2021, Ethiopia	Mistakes made with negative consequence to patients multiple times (29.3%), Lack enough time/attention to patients (33%), don't monitor patient in the OR as closely as they should multiple times (3.3%), medication errors once in the last year(41.8%).

Burnout Interventions: None of the studies included had implemented a burnout intervention.

DISCUSSION

The mean of the reported raw scores in this scoping review for emotional exhaustion was 50.37, which indicates high emotional exhaustion among anaesthesia providers in Sub-Saharan Africa. The mean of the reported raw scores for depersonalization was 44.05, which indicates high levels of depersonalization among SSA anaesthesia providers. However, 35.7 was the mean of the reported scores for personal accomplishment, which indicated moderate levels of personal accomplishment.

The Medscape Physicians Burnout and Depression report 2024 ranked the incidence of burnout among categories of physicians. This report showed that anaesthesiologists had high levels of burnout, being among the top 10 category of physicians, with a prevalence of 50%. Physicians working in emergency medicine, obstetrics and gynaecology, and oncologists had the highest levels of burnout in this survey (about 63%, 53% and 53% respectively).

However, Afonso et al recorded a burnout incidence of 13.8% among anaesthesia providers in the United States of America.

The prevalence of burnout was particularly exacerbated during the COVID-19 pandemic as reported by the American Society of Anaesthesiologists because of the major roles played by anaesthetists during this period. Anaesthetists' expertise in airway management, ventilation, resuscitation, and care of the critically ill during the pandemic made them even more frontline. Furthermore, they worked in more remote areas, worked more irregular shifts, and were exposed to greater occupational hazards.[25]

The difference in study design, instruments for studying burnout, sample size, nature of the healthcare system and difference in study period could account for the varying prevalence rates.

Anaesthesia Providers' Personal Factors: This scoping review revealed younger anaesthetists, and those with fewer years of experience were associated with burnout. Individuals who were younger than 35 years had higher depersonalisation and Personal accomplishment scores in a study among Turkish healthcare workers implying greater burnout.[27] Findings in this scoping review are also similar to a survey conducted by John and colleagues on burnout among Indian anaesthesiologists. In their study, senior residents had higher levels of burnout compared to assistant professors and professors.[28] Health workers with more than 10 years experience were found to have lower DP and PA scores compared to those with less than 10 years in another study by Guclu et al.[27] However, some studies revealed that the incidence of burnout was independent of age category.[29] Older physicians have the advantage of having more experience, have elevated positions, in comparison to younger physicians with less experience, coping skills, and work more night shifts.[27]

Some studies in this scoping review associated burnout with psychiatric disorders such as anxiety and depression. Guclu and colleagues in Turkey showed a positive correlation between burnout, insomnia, and anxiety disorders.[27]

Work Environment: Factors identified in the professional environment that lead to burnout syndrome include high workload, ambiguity on roles, multiple responsibilities, overworking, prolonged working hours, unsatisfactory colleague relationships, lack of autonomy, lack of appreciation, and unfavorable events.[28,29] This scoping review revealed that some work environmental conditions such as the lack of the right equipment, lack of the right team, and lack of support from hospital management contribute to burnout. This is quite similar to what Afonso and colleagues reported, following a study on burnout among American Anaesthesiologists.[32] They found that the perceived lack of support at work (Odds ratio 10.0, 95% Confidence Interval 5.4-18.3), lack of support at home (Odds ratio 2.13, 95% CI 1.69-2.69) and staff shortages were associated with a high risk for burnout (OR 2.06, 95% CI 1.76-2.42). Working for more than 8 hours per day, and more than 10 night shifts per month was associated with high prevalence of burnout in Indian anaesthesiologists.[28]

Too many bureaucratic tasks, long hours at work, insufficient compensation, lack of autonomy, lack of respect from administrators, colleagues, patients were some of the factors identified that contributed most to burnout according to the Medscape Physician Burnout and Depression Report 2024.[26]

One out of every eight sub Saharan African medical personnel emigrate to high income countries.[33] With the impact of brain drain contributing to burnout among SSA Anaesthesia providers, Skelton and colleagues explored the push and pull factors associated with migration of anaesthesiologist's in Rwanda by conducting in-depth 60 minute interviews with Rwandan Anaesthsiologists'. Poor working conditions, lack of professional support, low salary and financial struggles, and demoralization when others emigrate were identified as the push factors. Major attractions to the High Income Countries (HICs) were better working conditions and higher salaries. However, family and community ties, patriotism, and optimism for the future were identified as some of the reasons why some of the Rwandan anaesthesiologists didn't migrate.[34]

Work Outcomes: a few of the studies included in this scoping review reported outcomes of burnout among Anaesthesia providers. In the United States of America, a nationwide survey of American Physicians in 2018 revealed that majority of physicians that reported medical errors had higher prevalence of burnout ($p < 0.001$). These errors were in the form of either an error in judgement, wrong diagnosis, technical mistakes during procedure, wrong prescription, wrong dosage, or

intervention for the wrong patient. These errors had resulted in patient death in 4.5% of respondents and permanent major morbidity in 5.3% of respondents during the period which the study was conducted.[5]

Burnout interventions: None of the studies in this scoping review included interventions on mitigating burnout; they however mentioned some causes. Aryankhesal et al did a systematic review on interventions on reducing burnout among physicians and nurses. Gratitude and thankful events, professional identity development programs, communication skills training, online programs and internet based interventions, psychosocial training intervention, mindfulness training, yoga, meditation, relaxation, touch therapy were all associated with a positive effect on burnout. The most effective skills identified in their study was training and communication skills improvement.[35]

A three step intervention was administered to 8 interdisciplinary units taking care of adult cystic fibrosis patients, with a significant impact on reducing their burnout.[36] The first intervention entailed an exercise that involved recording 3 good things daily in a journal, and then spending 5 minutes at the beginning of each meeting to share a good thing for 4 weeks. The second step was a presentation on strategies and tools to work more efficiently with less stress, and the last intervention was meditation. Mindfulness exercises were also included in the intervention. Using the Perceived Stress Scale-10 (PSS-10), a significant decrease from the 54th percentile before the intervention, to 36th percentile post-intervention was observed. Seven out of the 8 members had a decrease in their PSS-10 score. Fifty percent of the team members planned on using the intervention again.

Chesak and colleagues suggested some interventions to mitigate burnout in women physicians. Barriers to career progression should be addressed, identifying and reducing maternal bias, provision of mentorship opportunities, as well as policies supporting child care support, lactation and family leaves were suggested.[3]

Afonso and colleagues also suggested that support; both familial support and mentorship as actionable interventions to mitigate burnout among American anaesthesiologists.[32] Exercise, adequate sleep, meditation and stress reduction techniques were some of the coping mechanisms adopted by some physicians in order to reduce burnout.[26]

Medscape physician burnout and depression 2024 report revealed that majority of individuals with burnout haven't sought for help from mental health professionals and don't intend to do so.[26] However, as this was conducted in a high income country, it can not be extrapolated to the sub-Saharan region which is comprised mainly of Low and Middle Income Countries (LMICs). This report also stated schedule flexibility and raising physicians pay were some interventions noted to reduce burnout.

RECOMMENDATIONS

This scoping review has revealed that there are no/limited studies on burnout interventions targeted at Anaesthesia providers in Sub Saharan Africa. Interventions to mitigate burnout should be aimed particularly at the most vulnerable group identified in this scoping review; the young and the less experienced Anaesthesia providers.

This scoping review revealed that incentives should be aimed at individuals working in the public health sector. Improvement in working conditions of SSA Anaesthesia providers with better renumeration could lead to a decrease in emigration of these individuals, improved healthcare provider satisfaction. Provision of appropriate equipment, and team composition could also address some of the factors contributing to burnout identified in this review.

LIMITATIONS OF THE STUDY

Lack of studies with interventions, limited overall number of studies on burnout in SSA Anaesthesia providers. Heterogenous amount tools were used to measure burnout, and there were various interpretations of burnout scores.

CONCLUSION

Burnout, a triad characterized by emotional exhaustion, depersonalization and decreased personal accomplishment has a high prevalence in anaesthesia providers in Sub-Saharan Africa due to unique challenges. This scoping review has revealed that burnout among Sub Saharan Africa Anaesthesia providers is prevalent, particularly among the younger Anaesthesia providers and individuals working with inadequate team members and resources. Interventions to prevent and mitigate burnout among SSA anaesthesia providers were not suggested by the studies sampled in this review, and thus further studies are recommended.

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