MEDICAL SCIENCE

To Cite:
Assiri AM. Burden of burnout syndrome among ENT physicians in Saudi Arabia: A systematic review and meta-analysis. *Medical Science* 2023; 27: e144ms2919.
doi: https://doi.org/10.54905/disssi/v27i133/e144ms2919

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Peer-Review History
Received: 20 February 2023
Reviewed & Revised: 24/February/2023 to 06/March/2023
Accepted: 09 March 2023
Published: 15 March 2023

Peer-review Method
External peer-review was done through double-blind method.

Medical Science
pISSN 2321–7359; eISSN 2321–7367

Burden of burnout syndrome among ENT physicians in Saudi Arabia: A systematic review and meta-analysis

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ABSTRACT

Background: Burnout syndrome (BOS) has been associated with serious consequences on the healthcare providers as well as the healthcare system. ENT medical staff experience stressful work circumstances as this specialty is sometimes demanding. *Aim:* This systematic review and meta-analysis aims to identify and assess the burden of BOS among ENT medical staff in Saudi Arabia. *Methods:* The study was conducted following the guidelines and recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020. Studies were retrieved by searching the PubMed, EBSCO, Scopus, Web of Science through Clarivate and Google Scholar using keywords and Mesh terms related to BOS and ENT medical staff. Rayyan – Intelligent Systematic Reviews was used for managing citations and duplicate removal. We used Review Manager 5.4 for quantitative data synthesis. *Results:* Primary search yielded 101 articles, of which only 3 were included in the quantitative meta-analysis. The pooled prevalence of high emotional exhaustion was 48.7% (95% CI: 34.9%-62.5%), whereas the pooled prevalence of high depersonalization was 44.5% (95% CI: 29.7%-59.2%) and low personal accomplishments was 48% (95% CI: 40.5%-55.6%). The pooled prevalence of the overall BOS was 47.8% (95% CI: -11.4%-106.9%). There was significant heterogeneity (I^2 > 50%) in all of the pooled analyses. *Conclusion:* The aim of this study was to assess burnout syndrome among ENT physicians. The study found that nearly half of ENT residents in Saudi Arabia are burnt out. We recommend implementing measures to reduce and prevent burnout among ENT physicians in Saudi Arabia.

Keywords: Burnout syndrome; ENT medical staff; meta-analysis.

1. INTRODUCTION

It is indeed difficult on a mental, emotional and physical level to practice several medical and surgical fields. Addressing burnout among ENT physicians is crucial because of the potential negative effects it may have on ENT medicine doctors, their patients and health systems (West et al., 2016).

Burnout is a multifaceted condition with a long history in several

professions (Almatrafi et al., 2022). Freundenberger based his work using the term "burnout" as a term for a psychological condition with three dimensions—emotional exhaustion, depersonalization and decreased personal accomplishment (Freudenberger, 1974). Maslach then provided more recognizable descriptions of each component that are in line with her measurement tool, condensing the aspects of burnout into "exhaustion," "cynicism," and "inefficacy." Exhausted people feel over-extended and have run out of both their mental and physical resources (Maslach et al., 2001). High cynicism (depersonalization) scores exhibit traits such as callousness or detachment that are not typical of regular coping. The inefficacy (lower personal achievement) component scores highly for those who lack confidence or believe they have not accomplished much at work. Overall, those who experience burnout are regularly worn out, have less capacity for compassion and believe that their work is insignificant (Maslach et al., 1997).

Treating clients and coworkers like objects rather than individuals and being emotionally exhausted are two signs of burnout. Physical tiredness, poor judgement, cynicism, remorse, thoughts of inefficacy and a sense of depersonalization in interactions with patients or coworkers are further signs of burnout (Halbesleben & Demerouti, 2005). The Maslach Burnout Inventory, the most used evaluation instrument for determining burnout, was developed by Maslach using these concepts (MBI). The 22 questions in this tool generate scores for each of the three dimensions. The greater the score, the greater the degree of burnout in that area (Maslach et al., 1997). Instead of defining burnout as having a binary cutoff score, the MBI depicts a continuum, with higher scores corresponding to more severe symptoms and effects (Palamara et al., 2018). The MBI has been changed and condensed for convenience of use for certain demographics, but it is still proprietary.

It is challenging for institutions to foresee which team members will experience burnout because there is no clear agreement on the components that contribute to this condition (Bragard et al., 2015). A thorough grasp of the connection between these elements and burnout should assist responsible individuals in ENT departments of healthcare institutions in taking preventative measures to create a productive staff. Despite the fact that there are many burnout studies on ENT doctors from various parts of the world, we could not locate any published studies that systematically reviewed literature from Saudi Arabia.

Study aims

The study aim was to look at the extent and factors that contribute to burnout among ENT physicians working in Saudi Arabian hospitals.

2. METHODS

Study design

The study was conducted following the guidelines and recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 (Page et al., 2021).

Study period

The search was conducted from 1 August 2022 to 31 August 2022.

Search strategy

Studies were collected by searching the PubMed, EBSCO, Scopus, Web of Science through Clarivate and Google Scholar databases. For the database search, we used keywords and Mesh terms along with the Boolean operators AND and OR. As the endpoint keywords, we selected "burnout" and its essential terms ("emotional exhaustion," "depersonalization," "cynicism," and "personal accomplishments").

To identify relevant papers in the medical literature, these keywords were combined with population keywords such as "physicians," "residents," "medical students," “Otorhinolaryngology,” “Otolaryngology” and "ENT" (EM). Search keywords included burnout, burnout syndrome, Maslach burnout inventory, ENT, surgery, surgeons, residents, trainees and nurses. In addition to databases search, we performed a manual Google search. We searched for "endpoint" keywords on different EM/critical care blogs and lay press Web sites to make sure more obscure sources were covered. No language restrictions were applied and searches were made for articles dating back to January 1974 when burnout was first described (Freudenberger, 1974).

Inclusion and exclusion criteria

The following study inclusion criteria were used: Cross-sectional and observational studies that used the MBI to evaluate burnout and reported on its prevalence among medical professionals. Senior physicians, as well as junior physicians with basic medical degrees, such as a Bachelor of Medicine (MB), Bachelor of Medicine and Surgery (MBBS, MBChB, or equivalent), or Doctor of

Medicine (MD), who were undertaking supervised training, were referred to as medical/surgical residents or trainees, as well as nurses, were included in the study. Studies with incomplete or inaccessible data, were disregarded. Finally, publications that are not retrievable in full-text as well as systematic reviews, commentary, editorial pieces and other publications were also excluded.

Data management

Search results were extracted and imported into Rayyan – Intelligent Systematic Reviews website (Ouzzani et al., 2016) which was used for managing citations and duplicate removal. Title, abstract and full-text screening were carried out and Microsoft Excel sheet were used to extract data from included studies.

Data synthesis and meta-analysis

We used the Review Manager 5.4 for quantitative data synthesis. Random effects model was applied. Higgin's I^2 test has been used in order to evaluate the percentage of variability across studies with significant heterogeneity's cut-off point at $I^2 > 50\%$. Funnel plots were used in order to visually assess publication bias with a cut-off point of P-value at 0.1 or less.

Ethical considerations

An ethical approval for conducting the study was obtained from the Najran University Faculty of Medicine Committee of Scientific Research and Conferences, No. 21\18\2022 Date: 2\10\ 2022.

3. RESULTS

Search results

We conducted the primary search on the aforementioned databases and it yielded 101 articles, where 38 articles were removed in the duplicate detection and removal phase. Sixty-three articles were screened for title and abstract and 40 of them were excluded. We attempted to retrieve 23 studies and only managed to assess 17 full-texts for inclusion, where only three studies were finally included in the study (Figure 1).

Characters of the included studies

The study included three studies that included ENT residents (Aldrees et al., 2015; Al-Hakami, 2016; Sharaf et al., 2022). The total number of physicans included is 208, where male proportions ranged from 64.7% (Sharaf et al., 2022) (Aldrees et al., 2015; Al-Hakami, 2016). All of the included studies utilized the MBI for BOS diagnosis (Table 1).

Burnout Syndrome Prevalence

The pooled prevalence of high emotional exhaustion (Figure 2) was 48.7% (95% CI: 34.9%-62.5%), whereas the pooled prevalence of high depersonalization (Figure 4) was 44.5% (95% CI: 29.7%-59.2%) and low personal accomplishments (Figure 6) was 48% (95% CI: 40.5%-55.6%). The pooled prevalence of the overall BOS (Figure 8) was 47.8% (95% CI: -11.4%-106.9%). There was significant heterogeneity ($I^2 > 50\%$) in all of the pooled analyses.

The funnel plots presented in figures 3, 5, 7, 9 show nearly symmetrical distribution of the plotted data by visual inspection.

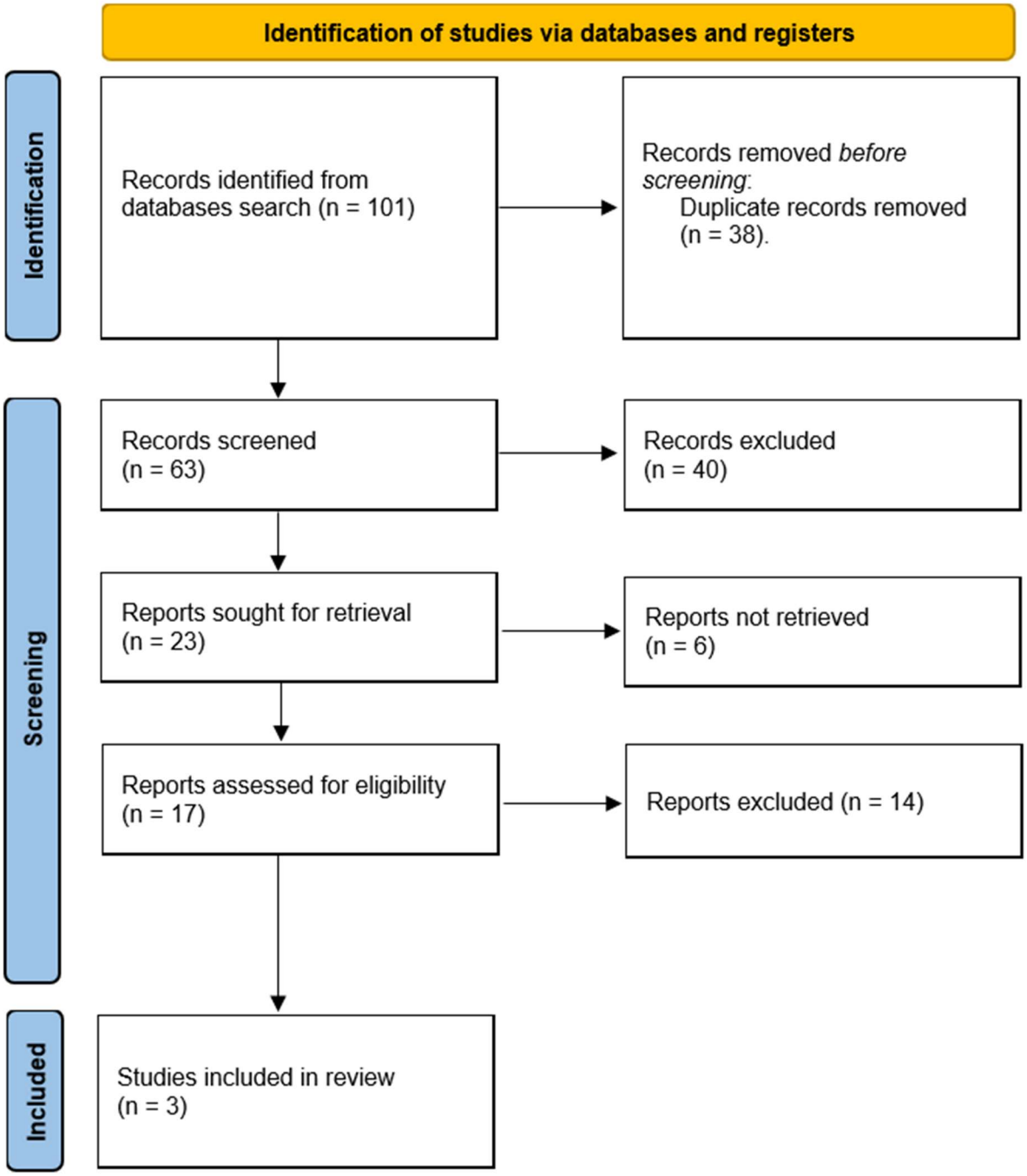

Figure 1 PRISMA flow chart of the search process.

Table 1 Characters of the included studies.

Study	Study design	Population type	Participants (number)	Age range, y	Males (%)	Tool
Aldrees et al., (2015)	Cross-sectional	ENT residents	85	25-40	67%	MBI
Al-Hakami., (2016)	Cross-sectional	ENT residents	72		67%	MBI-HSS
Sharaf et al., (2022)	Cross-sectional	ENT residents	51	27.9+2.14	64.70%	MBI

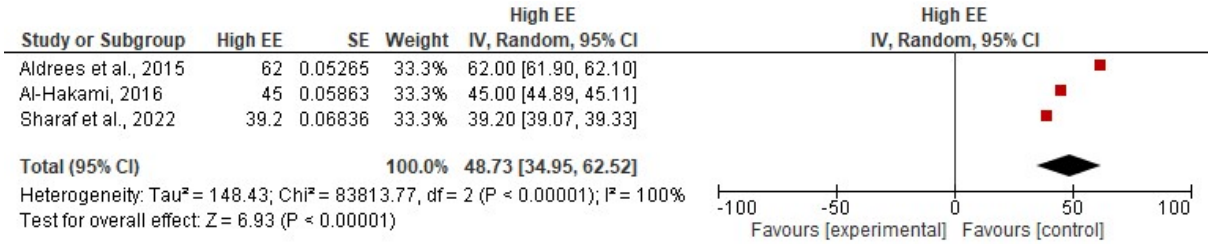

Figure 2 Forest plot of pooled prevalence of high EE among ENT physicians.

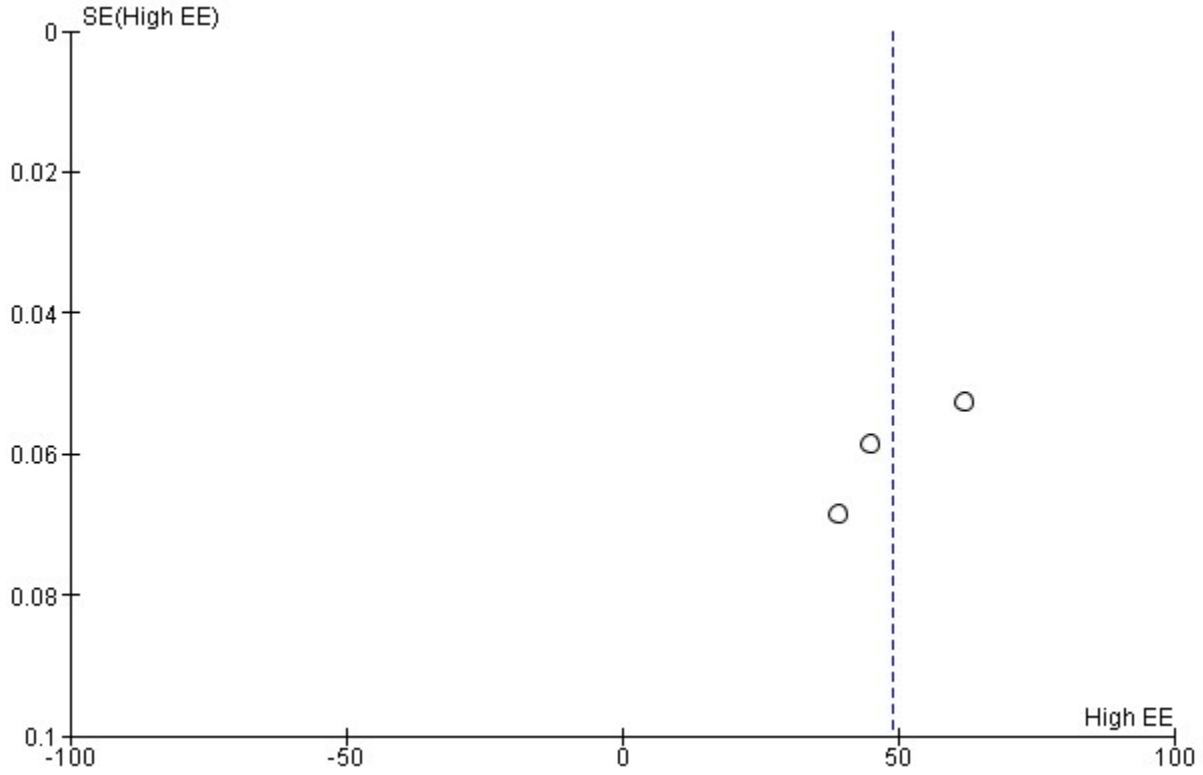

Figure 3 Funnel plot of high EE data.

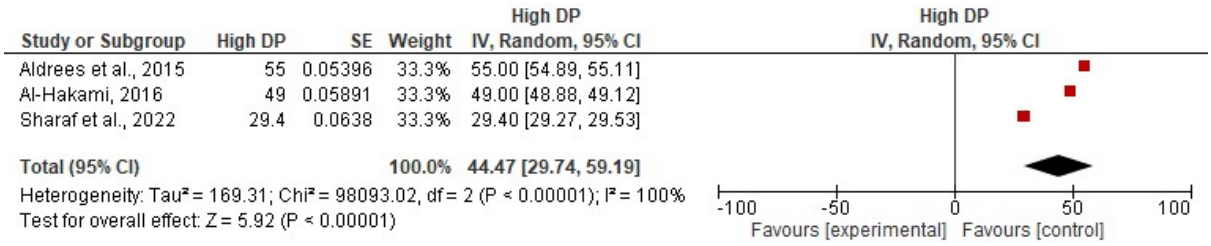

Figure 4 Forest plot of pooled prevalence of high DP among ENT physicians.

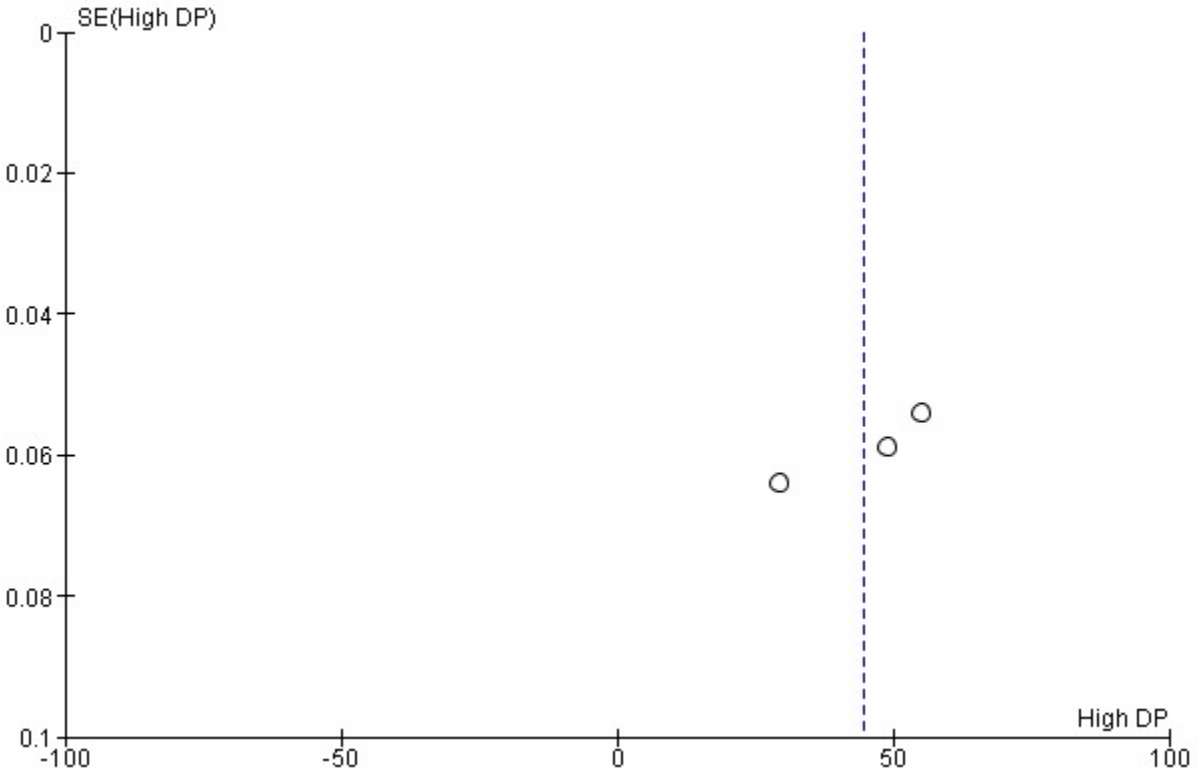

Figure 5 Funnel plot of high DP data.

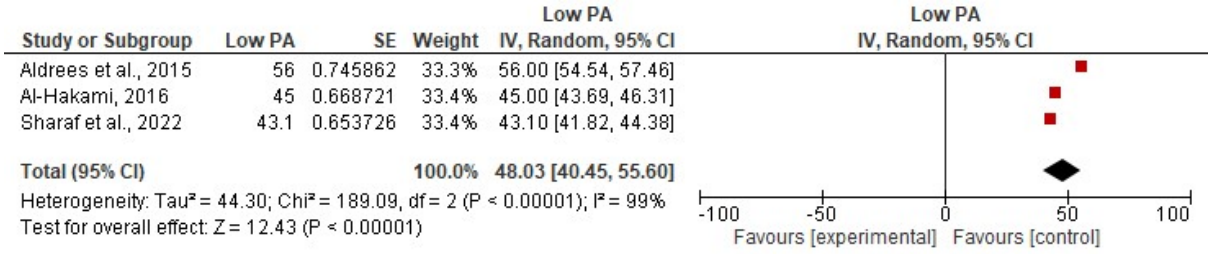

Figure 6 Forest plot of pooled prevalence of low PA among ENT physicians.

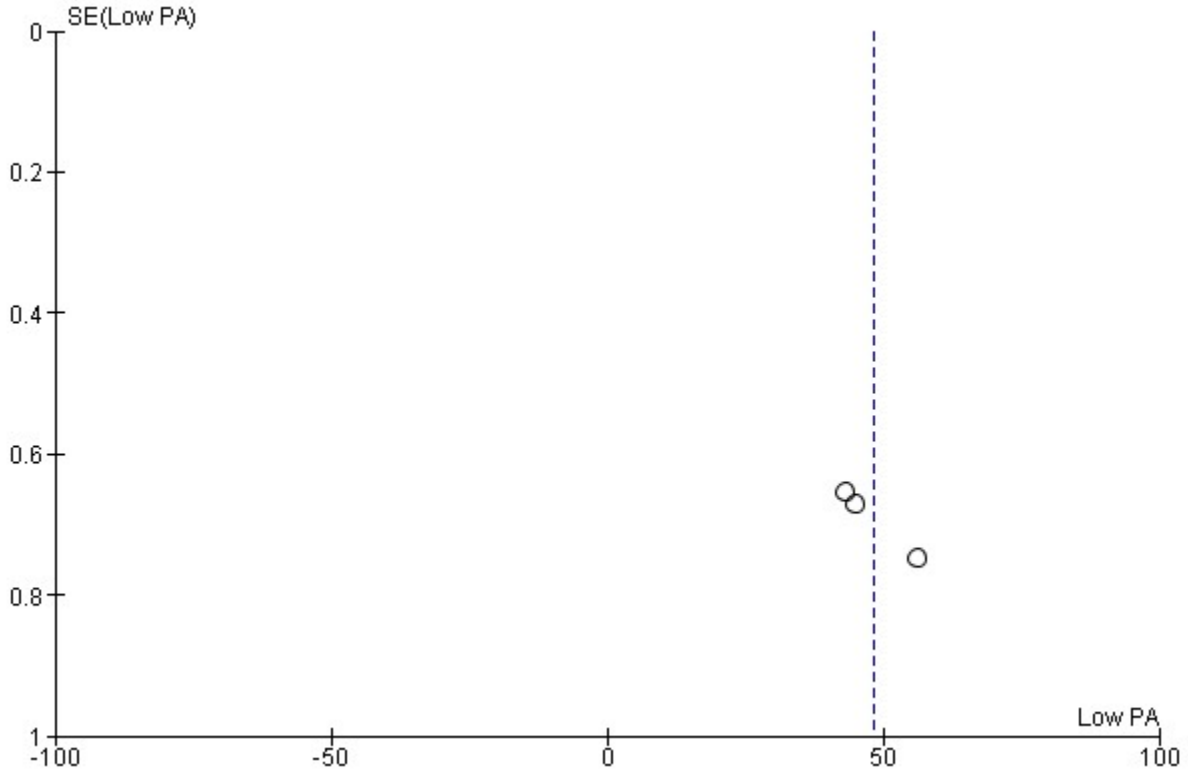

Figure 7 Funnel plot of high DP data.

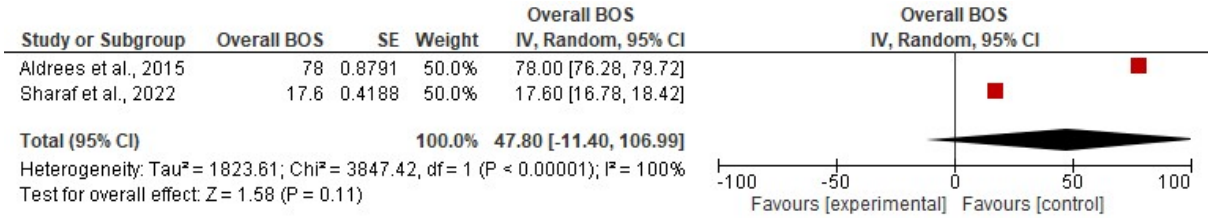

Figure 8 Forest plot of pooled prevalence of overall BOS prevalence among ENT physicians.

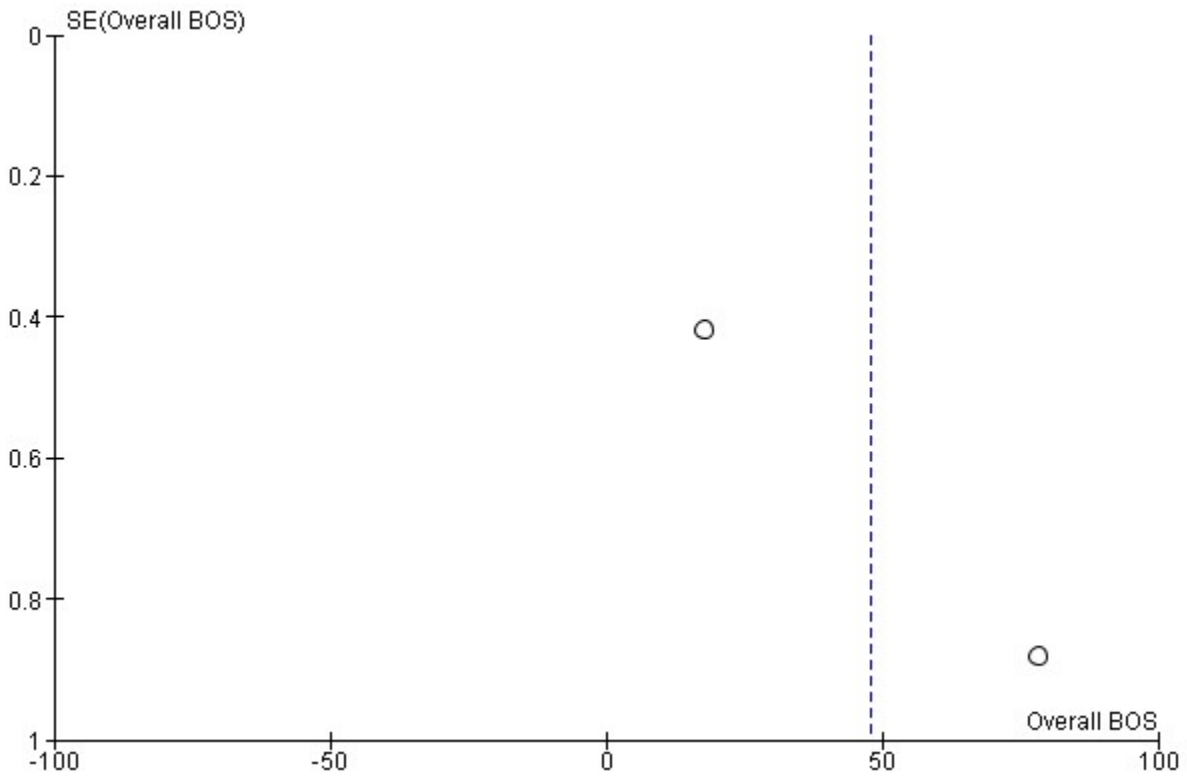

Figure 9 Funnel plot of overall BOS prevalence data.

4. DISCUSSION

Burnout of otolaryngologists is now regarded as a key research topic to assess the performance of physicians and residents in this field and to monitor the improvement and quality of training programs. This comprehensive review includes a quantitative meta-analysis of the overall rates of burnout among otolaryngology physicians and trends over time, how work hours restrictions have affected their well-being, current counterstrategies to reduce resident burnout and how rates of burnout among otolaryngology physicians compare across specialties.

Only three of the 101 papers identified in the primary search were used in the quantitative meta-analysis. In comparison, the pooled prevalence of overall BOS prevalence was estimated to be 47.8% (95% CI: -11.4%-106.9%). The MBI was used in a meta-analysis of studies to determine the prevalence of burnout and it was found that 51% of surgical residents worldwide reported experiencing burnout. Depending on the specialization, burnout among residents was prevalent at a rate of between 27 and 75 percent in the United States (Martini et al., 2004). The pooled prevalence of high depersonalization was 44.5% (95% CI: 29.7%-59.2%) and low personal achievements were 48% (95% CI: 40.5%-55.6%). All of the pooled analyses showed considerable heterogeneity (I^2 > 50%). A study that concentrated on surgical specialties discovered that 3% of the respondents suffered from burnout syndrome when using the stringent measures of EE, DP and PA. Additionally, 50% of participants were impacted when the burnout subscales were evaluated independently, with one in three surgeons having severe EE or DP (Bartholomew et al., 2018).

Our study found that the pooled prevalence for high emotional exhaustion was 48.7% (95% CI: 34.9%-62.5%). According to the Sharaf et al., study, high EI scores were linked to lower EE scores, suggesting that inhabitants with high EI were better able to prevent EE, this exemplifies the stress component of burnout syndrome, which may cause patients to emotionally and intellectually distance themselves from their jobs (Maslach et al., 2001). The research also revealed that high EE scores were adversely related with job satisfaction in terms of both compensation and operating room position, but favorably associated with a greater average on-call shifts number per month and average working hours. Therefore, it is conceivable that EE reflects effort and declines with increased effectiveness and rewards. In a similar vein, DP, which stands for the cynical side of burnout, was substantially connected with EE and is hence inversely related to EI. These results underline the need of ensuring residents have manageable working hours since EE is a direct result of physical and mental fatigue. Given that this also represents lower EE levels, the need of integrating operating theatre duties from the beginning of the residency program should be investigated (Sharaf et al., 2022).

All three included studies samples were ENT residents. A higher risk of burnout may arise during the residency phase of a surgical residency due to a number of particular pressures. Increased hours worked each week and the number of nights spent on call each week have been linked to worsening burnout and well-being among otolaryngology residents. Comparing themselves to their attending colleagues, otolaryngology trainees also report increased emotional hardness and callousness (Larson, 2021). The COVID-19 epidemic has, in a unique way throughout the last year, increased stress on the medical training process. According to one research of otolaryngology residents, the COVID-19 pandemic resulted in 51.3% more stress and 58.8% more anxiety than in prior years (Civantos et al., 2020; Chou et al., 2021). 9, 28 Many other topics, however, have yet to be fully investigated or addressed. Despite growing awareness of trainee burnout, there is no established method for keeping track of it. In a similar vein, programs cannot refer to a well-defined set of principles for improving trainee well-being.

A formal faculty mentorship program for trainees and providing residents with some protected time during regular working hours to complete tasks other than clinical patient care appear to be two fairly simple initiatives that could be easily implemented by the majority of residency programs to combat burnout and improve well-being, based on the data presented in this paper. Furthermore, having open dialogues with trainees about structural problems that influence their well-being may also result in improvements that can be put into practice, such as better parking accessibility or locker room availability.

5. CONCLUSION AND RECOMMENDATIONS

Our study aimed to assess burnout syndrome among ENT physicians, however, the extracted data only reported burnout among ENT residents. The study found that nearly half of ENT residents in Saudi Arabia are burnt out. We recommend establishing methods of assessing and tracking burnout among physicians and residents as this is a preventable cause of reduced productivity and performance in practice.

Acknowledgement

We thank the ERB for their collaboration in the performance of the study.

Author contributions

All the authors contributed equally in this meta-analysis.

Funding

This study has not received any external funding.

Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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