

Behind the White Coat: The Prevalence of Burnout among Obstetrics and Gynecology Residents in Azerbaijan

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Abstract

Resident doctors regularly suffer burnout because of a wide range of issues, including long working hours, high academic requirements, a lack of independence, balancing their workload and familial responsibilities, low benefits, and anxiety over their future. This is particularly problematic since burnout can increase the probability of medical mistakes and decrease the quality of patient care. This study aimed to assess the prevalence of burnout in OB-GYN resident doctors and to identify the potential interventions, which can be identified to reduce burnout among medical residents. This study was conducted in Baku, Azerbaijan, and used a descriptive study design to investigate the situation among residents in obstetrics and gynecology. The Maslach Burnout Inventory Human Service Survey (MBI-HSS) was used as the basis for the data collection method employed in this study. Software IBM SPSS version 22.0 was used to analyze the data. The significance level was set at $p < 0.05$. The study included 40 resident doctors in obstetrics and gynecology, with a mean age of 26.2 years. Female respondents formed a greater proportion of study participants (35 or 87.5 %). When we collected MBI-HSS Scores for burnout, we found 36 (90%) high scores followed by 4 average scores (10.0%). All female residents show high burnout scores. Average burnout scores were observed in 3 of the 5 male residents (60%). Medical residency programs in Azerbaijan might help the residents avoid burnout while creating the resiliency they need to develop both emotionally and professionally through the practical implementation of multiple techniques.

Keywords: Burnout, Resident doctors, Obstetrics and gynecology, Azerbaijan, Prevalence, Prevention

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Introduction

Since 2019, burnout has been included as an occupational phenomenon in the 11th revision of the International Classification of Diseases (ICD-11) [1]. Healthcare workers, including doctors, nurses, and other healthcare personnel, are at risk of burnout due to the demands of their jobs [1].

Three main symptoms, mainly emotional fatigue (EE), depersonalization (DP), and decreased personal accomplishment (PA), especially regarding one's

professional employment, combine to form the syndrome known as burnout [2]. EE refers to a state of chronic physical and emotional depletion arising from persistent and excessive stress. DP, on the other hand, refers to a condition where an individual becomes indifferent and skeptical towards others [2]. Lastly, decreased PA is characterized by negative self-assessment resulting from a perceived lack of professional success [2]. According to the World Health Organization (WHO), burnout is a condition caused by unmanaged constant strain at work [2]. On an individual level, burnout is associated with an

increased risk of motor vehicle accidents, medical illnesses, depression, cardiovascular disease, substance abuse, and suicide [3, 4]. On a systems level, burnout is linked to decreased productivity, job satisfaction, capacity to establish rapport with patients, and ability to work through complex medical decision-making [5].

Resident burnout results from a multitude of factors that can be categorized as personal, job-related, and organizational. Job-related factors that contribute to burnout include heavy workloads, long working hours, night shifts, the burden of documenting and filing electronic medical records, and the choice of medical specialty [6]. Medical professionals have higher rates of burnout compared to other populations. Burnout symptoms are reported by physicians at an average rate of 37.9% in the US, which is much higher than the incidence of 27.8% for non-physicians [7]. Burnout rates for residents in training were found to be twice as high as for their non-medical counterparts [7]. In 2020, the burnout rate among physicians was as high as 42%, compared to 46% and 39% in 2015 and 2013, respectively, as reported by the Medscape National Physician Burnout and Suicide Report. Similarly, multiple specialties of residents reported high burnout rates of between 41% and 74% [8]. The complicated nature of family physicians' work, which entails giving patients and their families accessible, thorough, and continuous treatment, puts them at risk for burnout as well [9]. Given these various factors, burnout is a significant concern for physicians, and mitigating its impact has become an active area of research [10, 11]. Stress and burnout are significant problems for anyone working in the mental health field [7]. In the years of their residency, over 50% of the participants reported acute emotional exhaustion, 33% depersonalization, and nearly 60% overall burnout. The prevalence of burnout among anesthesiology residents [7] was reported to range from 2.7% to 67.0% [12]. According to the Medscape National Physician Burnout and Suicide Report, the burnout rate among physicians was 42% in 2020, showing a fluctuation from 46% in 2015 and 39% in 2013. In a similar vein, residents in various medical specialties reported high burnout rates, ranging between 41% and 74% [13]. Residents in obstetrics and gynecology (Ob-Gyn) suffer high levels of stress because of the challenging nature of their jobs, both mentally and physically. They have significant levels of burnout generally [14].

On the Human Development Index (HDI), Azerbaijan, a developing country, is ranked 92nd worldwide. Its healthcare system consists of 566 hospitals with a total of 44,100 beds, 31,900 physicians, and 52,800 nurses. This amounts to 4.36 beds per 1,000 individuals, which is somewhat lower than the EU average of 4.59 beds per 1,000 people [15].

In Azerbaijan, residency programs are typically affiliated with universities. The residency admission criteria apply

to medical majors specified in the "Classification of residency level majors for preparation of medical staff," which was authorized by the Cabinet of Ministers of the Azerbaijan Republic on 14.06.2011. The duration of each program varies depending on the specific field of study, but on average it takes between 2 and 5 years to complete [16]. In Azerbaijan, the medical residency system has been in place for more than a decade. However, there have been no studies conducted on the mental health of medical residents, specifically regarding burnout. This gap in knowledge leaves medical residents vulnerable to burnout and its potential negative effects on their well-being and patient care quality. To address this issue, it is essential to identify potential interventions to reduce the incidence of burnout and promote the well-being of medical residents in Azerbaijan.

The objective of this study is to provide a more comprehensive understanding of the burnout phenomenon experienced by obstetrics and gynecology residents in Azerbaijan. This study aimed to assess the prevalence of burnout in OB-GYN resident doctors and to identify the potential interventions, which can be identified to reduce burnout among medical residents in Azerbaijan. The results of this study will enable the development of specialized preventive medical services for resident doctors. The final goal of addressing the health of these essential medical personnel is to improve the standard of patient care overall. By identifying and strongly addressing burnout, we can build a more sustainable healthcare environment that benefits medical residents, patients, and the larger medical community.

Materials and Methods

This research, conducted in Baku, Azerbaijan, implemented a descriptive study design to explore the situation among Ob-Gyn residents. The study was approved by the Ethics Committee in the Research Institute of Obstetrics and Gynecology, with approval number 3-28-10/3-102/2023. We hypothesized that the prevalence of burnout among OB-GYN residents in Azerbaijan will be high. The data collection tool utilized in this study was based on the Maslach Burnout Inventory Human Service Survey (MBI-HSS), English version, which was considered appropriate for the selected subjects (**Figure 1**). Considered the "gold standard" in measuring burnout, the MBI is the most widely utilized tool for assessing burnout among human services workers. It is widely recognized as a reliable and valid method for measuring burnout in medical healthcare professionals. The MBI-HSS tool is considered to be a highly feasible tool for the current research requirement, as it is one of the most validated and extensively tested tools available in the medical industry for measuring burnout [17, 18].

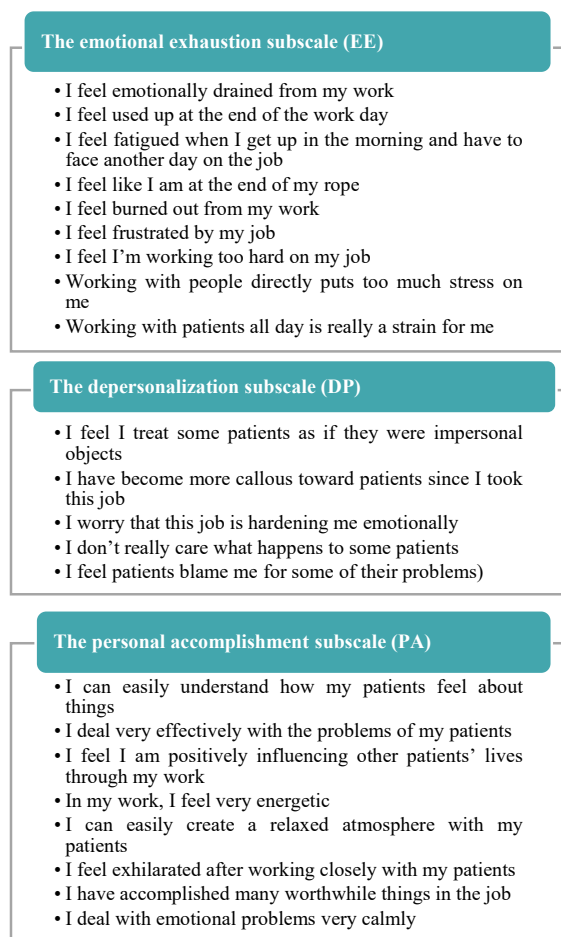


Figure 1. Maslach burnout inventory-human services survey (MBI-HSS)

The MBI-HSS, a commonly used 22-item questionnaire for assessing burnout among healthcare professionals, employs three subscales: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA) [19]. The MBI-HSS requires participants to rate the frequency of their experience of burnout using a 7-point Likert scale, ranging from 0 (never) to 6 (every day). The EE domain consists of nine items, with a total score range of 0–54; the DP domain consists of five items, with a total score range of 0–30; and the PA domain consists of eight items, with a total score range of 0–48. Burnout was defined as high scores of EE and DP and a low score for PA. EE was classified as high burnout (≥ 27), average burnout (14–26), and low burnout (≤ 13). DP was classified as low burnout (≤ 5), average burnout (6–9), and high burnout (≥ 10). PA was defined as high burnout (≤ 33), average burnout (34–39), and low burnout (≥ 40) (inverse scale) [10, 20].

Between March and June 2023, a survey was carried out over 2 weeks, targeting Ob-Gyn residents in Azerbaijan. All volunteers provided informed consent and were not compensated for their participation in the study. We included all the Ob-Gyn resident doctors under training

who gave consent to participate but we excluded resident doctors who were unwilling to participate. Participants who did not complete the research questionnaire in its entirety or had a residency duration of less than one year were excluded from the study. Moreover, individuals who had already finished their residency were also excluded from the research.

The questionnaire and participation consent form were sent to the identified residents through an email link. All residents independently participated in this study, and their identity was protected. To ensure a full understanding of the research, each participant received an invitation letter and a leaflet describing the study and their rights. They were required to complete an informed consent form before participating in the study to confirm their intention to do so. The respondents were notified that they could choose not to participate or could withdraw from the study whenever they desired. Two monthly reminders were sent after the initial email to increase the response rate. The study was conducted in compliance with the guidelines and principles outlined in the World Medical Association Declaration of Helsinki. The MBI-HSS tool utilized in this study was the English version. The data were securely maintained, and access was granted solely to members of the research team. Additionally, it was exported from Google Surveys to Microsoft Excel 365 (Microsoft Corporation, Redmond, WA, USA).

The questionnaires were gathered, checked for completeness, and sequentially numbered. The data analysis was conducted using Statistical Package for the Social Sciences (SPSS) software version 20.0 (SPSS Inc., Chicago, IL, USA). The significance level was established at $P < 0.05$. Descriptive statistics, including mean, standard deviation, and frequency, were calculated for all study variables.

Results and Discussion

A total of 40 OB-GYN residents (a response rate of 97%) were included in the study, of which 5 (12.5%) were male. There was no loss to follow-up among the participants. The mean age of the participants was 26.2 years, ranging from 23 to 30 years (**Table 1**). Among the participants, 13 (32.5%) were third-year residents and 10 (25%) were fourth-year residents in the residency. In terms of academic workload, 15% of residents reported working less than 40 hours per week, while 35% reported working 50 hours or more per week.

Table 1. Demographic characteristics of the participants (n = 40)

Data	No.	%
Age		
Male	37	92.5
Female	3	7.5

Sex		
Male	5	12.5
Female	35	87.5
Academic year		
2 nd -3 rd year	27	67.5
4 th -5 th year	13	32.5

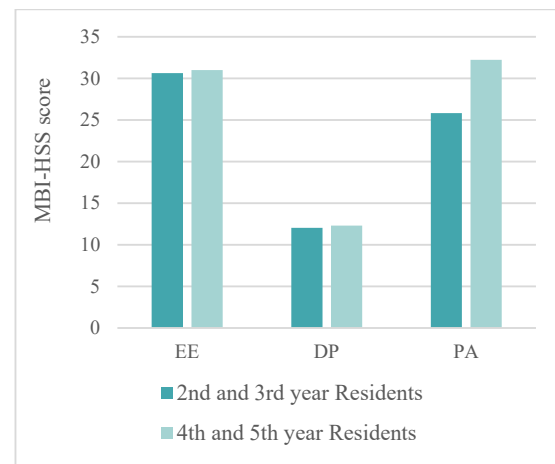
Table 2. Abbreviated MBI-HSS scores

Scale (Range)	Mean (SD)	Min	Max
EE (0-54)	23.75 ± 1.9	9	51
DP (0-30)	12.1 ± 5.5	0	23
PA (0-48)	27.9 ± 9.5	7	43

Table 3. Frequency of burnout among participants (Data were expressed as frequency (percentage), n = 40).

Burnout Domains	Low	Average	High
EE	1 (2.5)	12 (30)	27 (67.5)
DP	3 (7.5)	10 (25)	27 (67.5)
Reduced PA	4 (10)	6 (15)	30 (75)

When we collected MBI-HSS Scores for burnout, we found 36 (90%) high scores followed by an average of 4 (10.0%). The prevalence of the three dimensions of burnout is presented in **Table 2**. The mean EE of medical residents was 23.75 ± 1.9 , and the EE score ranged from 9 to 51 (**Table 2**). Within the high score, high emotional exhaustion was noted in 27 (67.5%); high depersonalization in 27 (67.5%), and very low personal achievement in 30 (75%) of respondents (**Table 3**). 40% of respondents (n = 16) had high burnout scores in all three dimensions. All respondents of the study (n = 40, 100%) reported experiencing burnout in at least one of the three dimensions. Of residents who had been in the residency program for 2–4 years, 92.5% (37 residents) reported high burnout. The correlation between the length of time in residency and burnout was statistically significant, with $P < 0.001$. All female residents showed high burnout scores. Average burnout scores were observed in 3 of all 5 male OB-GYN residents (n = 3, 60%). **Figure 2** shows particularly the increase in the reduced PA scale among 4th and 5th-year residents.

**Figure 2.** Mean MBI-HSS scores depending on residency years

Medical professionals frequently suffer burnout, which is described as an emotional reaction to constant stress. Obstetricians and gynecologists have one of the highest burnout rates of all medical specialties [21].

This research shows results from a survey aimed at determining the prevalence of burnout among Ob-Gyn residents in Azerbaijan. After evaluating burnout using the MBI-HSS, it emerged that a significant proportion of OB-GYN residents are suffering from high burnout, with just a small minority showing average levels. High burnout scores were observed in all the female residents in the research. In comparison, 60% of the male residents showed average burnout scores. Burnout is most likely to affect residents who are in the middle period of their residency program (2–4 years). This suggests this specific period in the residency may involve significant stresses or difficulties that increase burnout rates. Most professional students suffer burnout as a result of losing at least two years of their professional education [22].

Medical error risk is strongly associated with burnout among doctors. These mistakes, which might take the form of a misinterpretation or control, may prevent patients from getting the correct treatment or expose them to potentially adverse treatments. Even minor mistakes could result in significant long-term consequences in a discipline like obstetrics and gynecology, which deals with the health of expectant women and infants. The lives and health of mothers and newborns might be put at risk due to incorrect diagnoses or problems in treatment. Patients' health may be threatened by wrong diagnoses and subsequent treatments, which also trigger a cascade of unnecessary medical procedures. Diagnostic procedures that are not essential also waste medical resources and put excessive strain on healthcare systems. Incorrect pharmaceutical prescriptions also increase healthcare costs while exposing patients to possible adverse effects. Patients can require longer hospitalizations when residents are burnt out and may be inaccurate in their diagnostic or therapeutic

methods. An extended hospital stay results in more costs for hospitals, insurance providers, and frequently for patients as well.

Medical errors also have negative effects on patients. In the United States, medical errors cause more than 250,000 deaths annually, making it the third leading cause of death [23]. Today, patient safety is highlighted as one of the most important challenges. Patient care can be affected by system failures, poor organizational processes, and faulty management, as well as by healthcare professionals. Therefore, there should be evidence-based education, clinical practice guidelines, adverse events, technologies used in the service, better working conditions, ongoing guidance on infection prevention methods, and better psychological and emotional support should be provided to healthcare professionals. Occupational well-being, depression, anxiety, and burnout syndrome, although they have different characteristics among themselves, are determining factors that affect the care given to patients. It has been suggested that there is a proven relationship between moderate to high levels of burnout in healthcare professionals and poor patient safety [24]. Studies confirm that the presence of burnout leads to a decrease in patient safety. Deterioration in teamwork climate, safety, and job satisfaction has been observed in units with higher burnout scores [25]. Occupational fatigue, one of the criteria for burnout, indicates a lower ability for effective teamwork, which negatively affects patient safety.

Negative results, patient discontent, and an increase in complaints from patients and their families have all been linked to higher levels of burnout. This condition can be characterized by emotional tiredness and depersonalization, which lead to a healthcare provider's weariness and cynicism and a decline in the standard of care due to their cold and impersonal approach to patients' demands.

The effect of resident burnout extends outside the healthcare sector. Increased claim numbers for insurance companies may result in higher costs for both individuals as well as corporations. On a bigger level, government organizations may face the brunt of increasing medical care expenditures, which might result in higher taxes or reductions to other public services to make up for the added costs. Additionally, when countries struggle with rising healthcare costs, money may be shifted from other crucial sectors or programs, impacting global economic indexes. Enabling such high levels of burnout, from a more humane standpoint, promotes a cycle of mental and physical exhaustion in young doctors. This not only affects their physical health but also creates moral and ethical problems for the institutions that know about these problems yet do nothing to prevent them.

Burnout among residents also has extensive financial effects that go across the current healthcare setting. As demonstrated in our study, burnout can increase the risk of

medical errors, resulting in useless diagnostic procedures and unneeded treatment actions. This leads to prolonged hospital stays and the need for more medical resources, which raises healthcare costs. Such errors create tremendous pressure on national healthcare expenditures on a macroeconomic level. Patients who get inadequate treatment often need further treatments, which drives up the cost of healthcare. This has a knock-on impact that might increase the cost of insurance and increase the public's out-of-pocket spending. Additionally, as countries struggle with these high costs, there may be less investment in medical research and innovation, which are vital for future medical developments and economic growth in the biotechnology and pharmaceutical industries.

In conclusion, burnout has serious negative effects on the mind and body, but it can also have long-term, significant negative effects on the economy as a whole. All relevant parties, including lawmakers and hospital officials, need to be aware of these repercussions and act right away. Globally, areas substantially impacted by resident exhaustion may suffer a decrease in medical tourism, an important economic source for many governments. When the image of a country's healthcare system suffers as a result of the consequences of burnout, foreign patients may seek care elsewhere, potentially costing countries billions of dollars. Furthermore, as countries cope with these increased expenses, investment in medical research and innovation — areas critical for future healthcare advances and economic growth in the biotechnology and pharmaceutical industries — may be curtailed. Overall, while the emotional and physical consequences of burnout are serious, the economic waves that they cause throughout the global economy can have long-term and broad implications. Stakeholders at all levels, from hospital managers to lawmakers, must be aware of these consequences and act quickly.

Resident doctors must prioritize self-care due to the demanding nature of their area of work. They need to look after their physical, mental, and emotional wellbeing. Regular exercise provides a necessary break from everyday responsibilities in addition to boosting physical health. For mental clarity and focus during challenging shifts, sufficient sleep is essential. In the middle of their busy schedules, residents can find refuge in practices like yoga and meditation, which may help them to relax and maintain balance.

There may not seem to be enough time in the day due to the intense environment of residency programs. Residents can create an agenda for their daily duties by setting achievable goals, ensuring nothing essential is missed. Setting task priorities makes it easier to separate the urgent from the significant, giving a better picture of what needs immediate attention. Assignment is a crucial skill that supports an efficient process and prevents individual

fatigue. Recognizing how to share duties may result in more effective completion of tasks. Residents who participate in resilience training can acquire the knowledge and attitude necessary to handle the difficulties involved in residencies. This may involve stress-reduction techniques like cognitive-behavioral therapy or meditation for stress reduction; providing Ob-Gyn residents access to psychotherapy and mental health services intended to meet the difficulties they confront; or organizing workshops on burnout, its symptoms, and ways to avoid it. Residents can recognize early signs in themselves and seek prompt care by raising awareness.

Despite its limitations, the study has several noteworthy strengths. It is the first study of its kind to investigate the incidence of Ob-Gyn residents in this region, thereby shedding light on the magnitude of this issue in this population. The study's results can guide the development of further longitudinal intervention studies in similar populations across other regions in Azerbaijan to create preventative measures for burnout. Overall, the study's insights have significant implications for designing effective interventions that address burnout among Ob-Gyn residents in Azerbaijan.

Limitations

The main limitations of this study are its recruitment of participants from a single area, which limits the generalizability of the results, and its relatively small sample size. Additionally, all the data collected for this study was collected by medical professionals related to public hospitals. As a result, facts and views from private hospitals were not gathered. Given that methods, patient demographics, and allocation of money might vary greatly across public and private hospitals, this might lead to possible biases. Therefore, the current study cannot draw definitive conclusions about the burnout and depression levels of medical residents in Azerbaijan. A nationwide study that includes students from multiple universities or hospitals is needed to confirm the findings of this study.

Conclusion

Resident burnout is significantly impacting the sustainability of our current healthcare system by reducing the quality of patient care, putting individuals at risk, and putting financial pressure on the system. Therefore, research efforts aimed at addressing burnout have become a crucial and active area of focus. The relationship between workplace and burnout and its sub-dimensions, the effectiveness of coping mechanisms to protect the mental health of healthcare professionals, the effectiveness of medical action, and the sustainability of medical careers need to be further investigated. It is crucial to understand the relationship between healthcare professional well-being and the quality of patient care.

Future research may explore how burnout affects clinical decision-making, patient satisfaction, and overall health outcomes. It is important to note that long working hours are not the only contributing factor to resident burnout. Residents also experience reduced sleep hours, inadequate diet, lack of exercise, limited family and social interactions, and difficulties attending special events. Furthermore, sleep deprivation has been associated with the onset of depression, and the stress of training has been linked to many resident suicides. While there are potential solutions to burnout, more research is needed to determine their effectiveness. Healthcare organizations should prioritize addressing burnout to improve the well-being of healthcare professionals and the quality of care provided to patients and ensure the sustainability of medical careers. By implementing various solutions, medical residency programs in Azerbaijan can help their residents combat burnout and build the resilience they need to thrive both personally and professionally.

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