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# We do not Know Enough About Burnout Among Medical Residents in Turkey: A Rapid Review of the Literature

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## ABSTRACT

Studies worldwide have shown that 27–75% of medical residents experience burnout syndrome. There are 26,181 residents in Turkey, and the number has been increasing. In this study, we aimed to review how much Turkish medical residents are represented in the existing literature on burnout syndrome and uncover a possible knowledge gap. In this rapid review, the PubMed database was used to identify studies on burnout syndrome among Turkish medical residents up to June 2020. A search query was designed with a combination of related keywords and narrowed by city, country, and nationality. Fifteen studies were included in the review. These studies were published between 2006 and 2019. Most of them investigated residents from a single specialty (n=7), single center (n=7), or single city (n=10). Nine studies focused only on residents. The minimum, maximum, and median numbers of residents were 11, 270, and 74, respectively. The findings of this review indicate the literature gap on burnout syndrome in medical residents in Turkey. Few studies have addressed this problem, and their findings are insufficient to represent the status of the residents. The authors encourage the scientific community to conduct various studies with rigorous methodologies.

**Keywords:** Burnout, medical resident, mental health, medical education, health care management

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## INTRODUCTION

Burnout syndrome can be defined as “prolonged response to chronic job-related stressors” and consists of “a high degree of emotional exhaustion and depersonalization, and a low sense of personal accomplishment” (1). Across the world, burnout syndrome has been influencing the mental health of workers.

All health workers, especially the medical residents, who are being trained to be specialists in universities or research and training hospitals, work under overwhelming and stressful conditions. They usually work prolonged hours during 3 to 6 years of the residency period. Thus, residents are predisposed to burnout due to working under tough conditions most of the time (2). Another reason for the burnout syndrome in residents is that “they are overloaded with problems of other people” (3). Residents are exposed to problems that are not of their interest. Sometimes, they are forced to take the burden of patients’ problems or management flaws. Other factors that can lead residents to burnout syndrome are sleep deprivation, lack of knowledge, and self-doubt (4).

Studies worldwide have shown that 27% to 75% of medical residents, regardless of their specialty, experience burnout syndrome (5). Burnout syndrome leads to serious mental and physical problems. It affects both workers’ performance in professional careers and private lives. Some consequences of burnout syndrome include “decreased quality of care, increased medical error and malpractice rates, costly job turnover, maladaptive coping strategies (e.g., substance abuse, etc.), and increased risk for suicide” (6).

There are 26,181 residents in 68 university hospitals and 86 research and training hospitals in Turkey. Thousands of physicians start residency each year (7, 8). In spite of the foreseeable and modifiable harms of burnout syndrome on both residents and patients, no solutions have been developed or no comprehensive analysis of the problem has been performed in Turkey. Before developing a solution, the problem must be understood. As medical residents work in specific conditions in the Turkish health system, neither studies on other health workers nor those on residents of other countries are representative enough.

Therefore, in this study, we aimed to review how much Turkish medical residents are represented in the existing literature on burnout syndrome and uncover a possible literature gap.

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## MATERIALS and METHODS

In this rapid review, the PubMed database was used to identify studies on burnout syndrome among Turkish medical residents up to June 27, 2020. A search query was comprised of a combination of the keywords “burnout syndrome,” “physician,” and “resident,” and their variations. The query was narrowed to yield studies with Turkish subjects by using names of 81 cities along with the names of the countries and nationalities. The full search query, flow diagram of the review process, and bibliographic information of the included studies can be found in the supplementary materials.(Appendix 1)

The inclusion criterion was studies that provided estimates of the burnout levels of medical residents in Turkey. The exclusion criteria were studies that excluded medical residents, did not measure burnout levels (via a reliable scale), and were not empirical.

The data were extracted from the included studies and analyzed in Excel. The number of studies that included a resident group; the minimum, maximum, and median numbers of residents in the studies; range of publication years; and frequencies for methodological features were analyzed.

## RESULTS

Of the 93 retrieved studies, 15 were included for data analysis. Seventy-eight studies were excluded after the abstract and full text screening because of their subject groups and topics. The reasons for the exclusion were as follows: not conducted in Turkey (n=22), did not include a resident group (n=21), was not a burnout study (n=13), did not include any physician group (n=12), did not have distinguishable results from Turkish participants (n=4), was a review study (n=4), was a commentary (n=1), and did not have an accessible full text (n=1).

Fifteen studies involved a resident group. The extracted data are presented in Table 1. These studies were published between 2006 and 2019. Ten studies were conducted in a single city, and one was conducted in two cities. The most studied city was Istanbul (n=4). Seven of the studies were conducted in one center. Eleven studies included residents of university hospitals, and seven included residents of research and training hospitals.

Seven studies included residents from a single medical specialty. The most studied specialty was pediatrics (n=3), and the other specialties studied were as follows: chest diseases, forensic medicine, emergency medicine, internal medicine, family medicine, anesthesiology, and oncology.

Except for one study that used probability sampling (stratified, cluster, and systematic), all the studies either tried to enroll the whole of a limited population (n=11) or did not report the sampling method (n=2), or applied convenience sampling (n=1). The participation rate was not reported in five studies and was <70% in two other studies.

Nine studies focused only on residents. The minimum, maximum, and median numbers of residents were 11, 270, and 74, respectively. Figure 1 presents the distribution of the number of participants in the studies by workforce segments.

Data collection methods were not reported in five studies and were non-standardized in two others. All the studies used the Maslach Burnout Inventory (MBI) for the measurements. One study used only one of the three subscales of the MBI.

## DISCUSSION

Although the world literature indicates high prevalence (5) and serious morbidities (6) of burnout in medical residents, the present review did not find robust knowledge about the status of Turkish medical residents, even historically.

The introduction of the burnout concept dates back to 1973 (9). After the development of the MBI in 1981 (10), the topic has gained more attention. However, the earliest burnout study that involved a resident group from Turkey was published in 2006, which was identified in our search. Until then, only 14 more studies had medical residents as subjects. However, none of them had a representative or adequate sample for extrapolating results to Turkish medical residents or a wider population. The median and maximum numbers of residents in the studies were 74 and 270, respectively. While one study used probability sampling from the population of all physicians in Istanbul (only 69 of its participants were residents), the rest of the studies either did not report the sampling method or aimed to enroll the whole of a limited population. Moreover, five of the studies did not report the participation rate. This makes extrapolation of the results impossible even to that limited population. Many studies had varied serious limitations in illustrating the situation because they surveyed residents from a single specialty (n=7), single center (n=7), or single city (n=10). The Turkish Medical Specialty Code recognizes 41 main medical specialties and many subspecialties. However, only 7 specialties were studied. These limitations suggest that the existing literature can represent neither the whole medical residents nor residents from an actionable subpopulation (by specialty, hospital type, city, etc.) in Turkey.

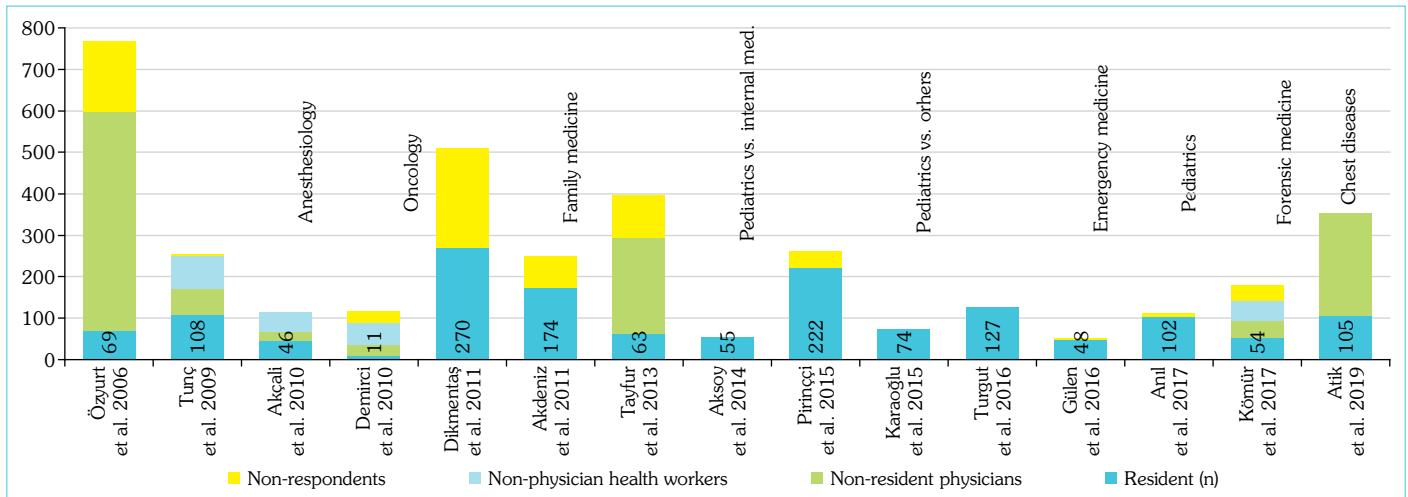
Beyond being trainees, residents arguably play the most crucial role among the health care workforce in the university and research and training hospitals in Turkey. Although the law points to specialist physicians, residents take responsibility for the care of patients de facto. Turkey underwent a substantial transformation of the health system within the last two decades. While establishing many regulations about the work of physicians (11), Turkey's renowned Health Transformation Program left several blind spots in the work of residents. They are overwhelmed owing to unregulated work schedules. Thus, they cannot find time, energy, and support for their training. They are frequently underpaid owing to the discretionary distribution of revolving funds of hospitals and demotivated because of poor management, unreliable institutional policies, violence from patients and relatives, and mobbing. These specific conditions require specific studies about burnout among Turkish medical residents.

The use of a single database is the main limitation of the present study. However, PubMed is known for being a credible and extensive database for good-quality studies and thus was the first choice for this rapid review, which was conducted with limited resources. Future systematic reviews may include more databases and governmental reports if available.

**Table 1.** Characteristics of the burnout studies that involved medical resident groups in Turkey

Author	Year	Cities	Centers	Type of centers	Specialties	Sampling method	Sample size	Non-respondents	Participation rate	Residents	Non-resident physicians	Non-physician health workers	Data collection method	Measurement
Ozyurt et al.	2006	Istanbul	Multiple	University, RTH, Others*		Probability	768	170	77.9%	69	529	81	Face-to-face interviews	MBI
Tunc et al.	2009	Sakarya	Single	University		None	255	4	98.4%	108	62	46	Self-administered	MBI
Akçali et al.	2010	Central Anatolia Region	Multiple	University, RTH	Anaesthesiology	None			Not reported	46	21	53	E-mail surveys	MBI
Demirci et al.	2010	İzmir	Single	University	Oncology	None	117	27	76.9%	11	26		Self-administered	MBI
Dikmetaş et al.	2011	Samsun	Single	University & RTH**		None	510	240	52.9%	270			Self-administered	MBI
Akdeniz et al.	2011		Multiple	University, RTH	Family medicine	None	250	76	69.6%	174			Not standardized	MBI
Tayfur et al.	2013	Antalya, İstanbul	Multiple	University, Others*		Convenience	400	105	73.8%	63	232		Not reported	MBI+EE
Aksoy et al.	2014	Ankara	Single	University	Paediatrics vs. internal med.	Not reported			Not reported	55			Self-administered	MBI
Princci et al.	2015	Elazığ	Single	University		None	261	39	85.1%	222			Not reported	MBI
Karaoglu et al.	2015	Konya	Multiple	University, RTH	Paediatrics vs. others	Not reported			Not reported	74			Not reported	MBI
Turgut et al.	2016	İstanbul	Single	RTH		None			Not reported	127			Not reported	MBI
Gulen et al.	2016		Multiple	University	Emergency medicine	None	53	5	90.6%	48			Not reported	MBI
Anıl et al.	2017	İzmir	Multiple	RTH	Paediatrics	None	111	9	91.9%	102			Under supervision	MBI
Kömür et al.	2017	İstanbul	Single	Public***	Forensic medicine	None	180	38	78.9%	54	40	48	Self-administered	MBI
Atik et al.	2019		Multiple	Not reported	Chest diseases	None			Not reported	105	247		Not standardized	MBI

MBI: Maslach Burnout Inventory (EE: Emotional Exhaustion subscale); RTH: Research and training hospital; \*: May include state hospitals, private hospitals, and public and private primary care facilities; \*\*: Common use of hospital; \*\*\*: Council of Forensic Medicine



**Figure 1. Distribution of the number of participants by work segments in burnout studies that involved medical resident groups in Turkey**

## CONCLUSION

The findings of this review indicate the literature gap on burnout among medical residents in Turkey. Few studies have addressed this problem; however, they provide limited findings to represent the status of all residents. The authors encourage the scientific community to conduct various studies with rigorous methodologies, larger sample sizes, higher participation rate, participation from all specialty areas, and multiple centers. Studies all have limitations, but better studies will contribute to our common knowledge. Knowledge that would enable better understanding of medical residents and intervention for their problems is needed.

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