

# RURAL OBSTACLES AND CAREER ANXIETIES VOCATIONAL CONCERNS AMONG MEDICAL INTERNS



## Kırsal engeller ve kariyer kaygıları: intörnlerin mesleki endişeleri

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### Abstract

Medical students face a multitude of challenges including rigorous exams, exposure to diseases and death, and the stress and anxiety associated with preparing for the Medical Specialty Exam (MSE). We aimed to determine what are the primary reasons for vocational future concerns among intern doctors, and are there gender differences in the causes and levels of the concerns. This cross-sectional study was conducted at Ondokuz Mayıs University Faculty of Medicine between July 2019 and March 2020, and 148 interns whose informed consent was obtained were included in the study. The data were collected by 5-point Likert type scale for interns' future concerns, consisted of 15 items, and 3 subdimensions. The Cronbach's alpha coefficient of the scale was 0.89. Of the 148 participants with a mean age of 23.9 years, 43.9% were male, and 56.1% were female. The main reasons for concern were "inability to prepare for the medical specialty exam (68%)" and "failure to pass the MSE (58%)". These had been followed by concerns about "compulsory service in the eastern regions", "dealing with medical emergencies", and other professional incompetence. Few interns reported that they were worried about being unemployed (13%). We determined that the vocational concerns of the females were significantly higher than the males, especially about working in the eastern regions, medical emergencies, and clinical skills ( $p<0.05$ ). The fact that interns aspire to become specialists while avoiding the sole responsibility of diagnosis and treatment highlights deficiencies in medical education programs, particularly in the area of practical skills, for cultivating competent and self-confident physicians.

**Keywords:** Anxiety, future concern, intern, medical education, medical specialty exam.

### Özet

Tıp fakültesi öğrencileri, zorlu sınavlar, hastalıklara ve ölüme maruz kalma ve Tıpta Uzmanlık Sınavı'na (TUS) hazırlanmanın getirdiği stres ve kaygı dahil birçok zorlukla karşı karşıya kalmaktadırlar. Bu durum, öğrenciler arasında kaygı ve tükenmişliğin artmasına neden olmaktadır. Bu çalışmada, intern hekimlerin mesleki gelecek endişelerinin başlıca nedenlerini ve nedenler ile endişe düzeylerinde cinsiyete bağlı farklılıkların olup olmadığını belirlemeyi amaçladık. Bu kesitsel çalışma, Ondokuz Mayıs Üniversitesi Tıp Fakültesi'nde Temmuz 2019 - Mart 2020 tarihleri arasında yürütüldü. Bilgilendirilmiş onamı alınan 148 intörn çalışmaya dahil edildi. Gelecek kaygıları, 15 sorudan ve 3 alt boyuttan oluşan 5-li derecelendirmeli İntörn Mesleki Gelecek Endişesi Ölçeği (İMGEÖ) kullanılarak toplandı. Ölçeğin Cronbach Alfa güvenilirlik katsayısı 0,89 olarak hesaplandı. Ortalama yaşı 23,9 olan 148 katılımcının %43,9'u erkek, %56,1'i kadındı. En büyük endişe nedenleri %68 ile "Tıpta Uzmanlık Sınavı'na (TUS) hazırlanamama" ve %58 ile "TUS'ta başarısız olma" idi. Bunları "doğu bölgelerinde zorunlu hizmet", "acil durumlara başa çıkma" ve diğer mesleki yetersizliklerle ilgili kaygılar takip etti. İşsiz kalma endişesi bildiren intörn sayısı ise azdı (%13). Kadınların mesleki kaygılarının erkeklere göre anlamlı derecede daha yüksek olduğu; özellikle doğu bölgelerinde çalışma, acil durumlar ve klinik becerilerle ilgili endişelerin daha belirgin olduğu saptandı ( $p<0,05$ ). İntörnlerin uzman olma isteğinin yanı sıra tanı ve tedavi sorumluluğunu tek başına üstlenmekten kaçınmaları, tıp eğitimi programlarının -özellikle uygulama becerileri alanında- yetkin ve kendine güvenen hekim yetiştirme konusunda eksikleri olduğunu göstermektedir.

**Anahtar kelimeler:** Kaygı, gelecek endişesi, intörn, tıp eğitimi, Tıpta Uzmanlık Sınavı (TUS).

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## Introduction

In Türkiye, medical school students undergo a demanding six-year medical education program that equips them with the necessary knowledge, skills, and professional attitudes. The transition from the initial three-year pre-clinical phase to the subsequent three-year clinical phase can be particularly challenging and anxiety-inducing, mainly due to direct interaction with real patients and exposure to potential adverse outcomes, such as patient morbidity and mortality (1). Interns often face intense work demands throughout the day, leading to increased stress and fatigue. The internship period, characterized by long working hours, inadequate sleep, and disruptive night shifts, can negatively affect mental health, affecting their well-being (2, 3).

### Post-graduation employment

After graduation, medical graduates face another challenging phase, which involves fulfilling compulsory service in the region the Ministry of Health assigned to them, typically ranging from 300 to 600 days. This compulsory service is a prerequisite for practicing medicine in Türkiye, and the entire process has been associated with heightened levels of anxiety and burnout among medical students (4, 5). Because the majority of newly graduated doctors fulfill their compulsory service in regions with relatively lower socioeconomic status and rural areas in Türkiye. When comparing urban and rural areas, it is observed that life expectancy in rural areas is shorter, and there are higher rates of circulatory and respiratory diseases, diabetes, injuries, suicide attempt, and mortality (6). The main challenges in providing healthcare services in rural areas include the low social status of women, low levels of education, and the high prevalence of infectious diseases that lead to higher mortality rates in infancy and childhood (7).

In terms of physician distribution in Türkiye, the number of specialist physicians working in the public and private sectors is relatively balanced. However, there is a higher concentration of general practitioners within the public healthcare system, as they are predominantly employed by the Ministry of Health (8). Upon completing their medical education, physicians in Türkiye have two career options. They can participate in the mandatory state service lottery as general practitioners and start working in an assigned location. Alternatively, they can work as medical assistants in hospitals by passing the medical specialty exam (MSE) administered by a central examination board.

### The MSE and residency programs

The MSE assesses cognitive skills in basic and clinical medical sciences through multiple-choice questions, serving as a mandatory requirement for starting specialty training in any medical field in Türkiye. Candidates are ranked based on their scores and placed in their chosen specialization branches, considering the limited number of available residency positions (9, 10).

Failing to prepare for or pass the MSE and subsequently being unable to become a specialist pose significant challenges for young physicians and physician candidates. They may be required to work as general practitioners in low socioeconomic regions, which can be disheartening for those with high economic and social expectations (10-13). The increasing number of general practitioners unable to pass the MSE, coupled with the growing number of new medical schools, has created a challenging situation where only one out of ten physicians can secure a place in a residency program (8). Interns also face difficulties in preparing for the exam during their internship, as they are engaged in intensive clinical tasks. These unfavourable conditions further amplify

the pressure, stress, and anxiety experienced by intern doctors striving to succeed in the MSE (10, 13).

While stress and anxiety can enhance students' creativity and development to a certain extent, continuous and excessive levels have a detrimental effect on learning and working performance (14). This issue, affecting the well-being and professional lives of medical students, is increasing globally (15, 16). The challenging educational period, exam pressure, lack of self-confidence resulting from inadequate education, concerns about the future, high income and prestige expectations, uneasiness about the medical profession, and the pressure to specialize contribute to higher levels of anxiety and depression among medical students compared to students in other undergraduate programs (10, 13). We hypothesized that intern doctors in a medical faculty experience significant

levels of anxiety and concern about their vocational future, particularly related to factors such as the medical specialty exam (MSE), compulsory service requirements, and career prospects as general practitioners. Additionally, we anticipate that there may be gender differences in the causes and levels of vocational concerns among intern doctors. Thus, we planned this study in order to find answers to the following research questions:

- a) What are the primary reasons for vocational future concerns among intern doctors in a medical faculty?
- b) How do intern doctors perceive and prioritize different aspects of their vocational future, such as passing the MSE, fulfilling compulsory service requirements, and career prospects as general practitioners?
- c) Are there gender differences in the causes and levels of vocational concerns among intern doctors?

## Material and Method

### Design and setting

This cross-sectional study was conducted at the Faculty of Medicine of Ondokuz Mayıs University between July 1, 2019, and March 30, 2020. Each month, new groups of 22-25 intern doctors participated in the Public Health internship. We aimed to include all public health intern groups during the 2019-2020 educational period in this study. However, due to the restrictions imposed on face-to-face training as a result of the Covid-19 pandemic, we had to conclude the study in March 2020. The main outcome criterion was the vocational future concerns and ranking, if any, of the interns. The secondary outcome was to compare gender differences in the causes for concern.

### Ethics approval

The study was approved by the Clinical Research and Ethics Committee of Ondokuz Mayıs University (KA EK: 2019/823) and was conducted in

accordance with the principles outlined in the Declaration of Helsinki 1975. Informed consent was obtained from all participants, and they were informed about their right to withdraw from the study at any time without consequences. Institutional permissions were obtained from the Ondokuz Mayıs University Rectorate and the Dean of the Faculty of Medicine.

### Participants

The criteria for inclusion in the study were to be in a public health internship group, to volunteer to participate in the study, and to give informed consent. A total of 148 out of 162 interns were included in the study and a response rate of 91.4% was achieved. The interns completed the questionnaire themselves.

### Instrument

After providing the interns with information about the research, they were

asked to complete a questionnaire consisting of 15 sociodemographic questions and 15 questions related to vocational future concerns. The interns' future concern scale (IFCS) was developed based on findings from previous studies conducted on Turkish intern doctors (3, 9, 10, 13, 17-20). Concern levels were assessed through self-reports, and participants were requested to rate the level of concern for each reason on a 5-point Likert scale, ranging from 0 (Very low) to 5 (Very High). The IFCS consisted of 15 items and 3 sub-dimensions, namely MSE concern, Clinical competence concern and Socioeconomic concern. In order to test the validity of the IFCS, the main components made according to the

## Results

The mean age (SD) of the intern doctors was 23.9 (1.0) years. Among the 148 participants, 65 (43.9%) were male, and 83 (56.1%) were female. The primary reason for choosing medical school was job security after graduation, which was reported by 39.9% of the participants. This was followed by interest in medicine (23.0%), family's desire (18.3%), and recommendations from friends, teachers, or graduates (10.1%). Regarding the educational background of their parents, 31.4% of the interns reported that their mothers were university graduates, while 56.1% stated that their fathers had a university degree. Additionally, 10% of the interns were engaged in part- or full-time income-generating jobs.

The distribution of data on the causes and levels of vocational future concern among interns, which we have collected under fifteen headings, is presented in Table 1.

When considering the causes of anxiety reported as 'high' and 'very high,' it was observed that concerns about the MSE ranked first on the list (Figure 1). These concerns were followed by

varimax transformation support the three-factor structure of the factor analysis results and explain 62.2% of the total variance. The Cronbach Alpha coefficient calculated to test the reliability of the scale was found 0.89.

## Statistical analysis

The statistical analysis was performed using SPSS version 22.0 (IBM Corporation, Armonk, NY, USA) software. Continuous variables were reported as means (standard deviations), while discrete variables were presented as frequencies and percentages. The chi-square test was employed to compare categorical variables, and a p-value of less than 0.05 was considered statistically significant.

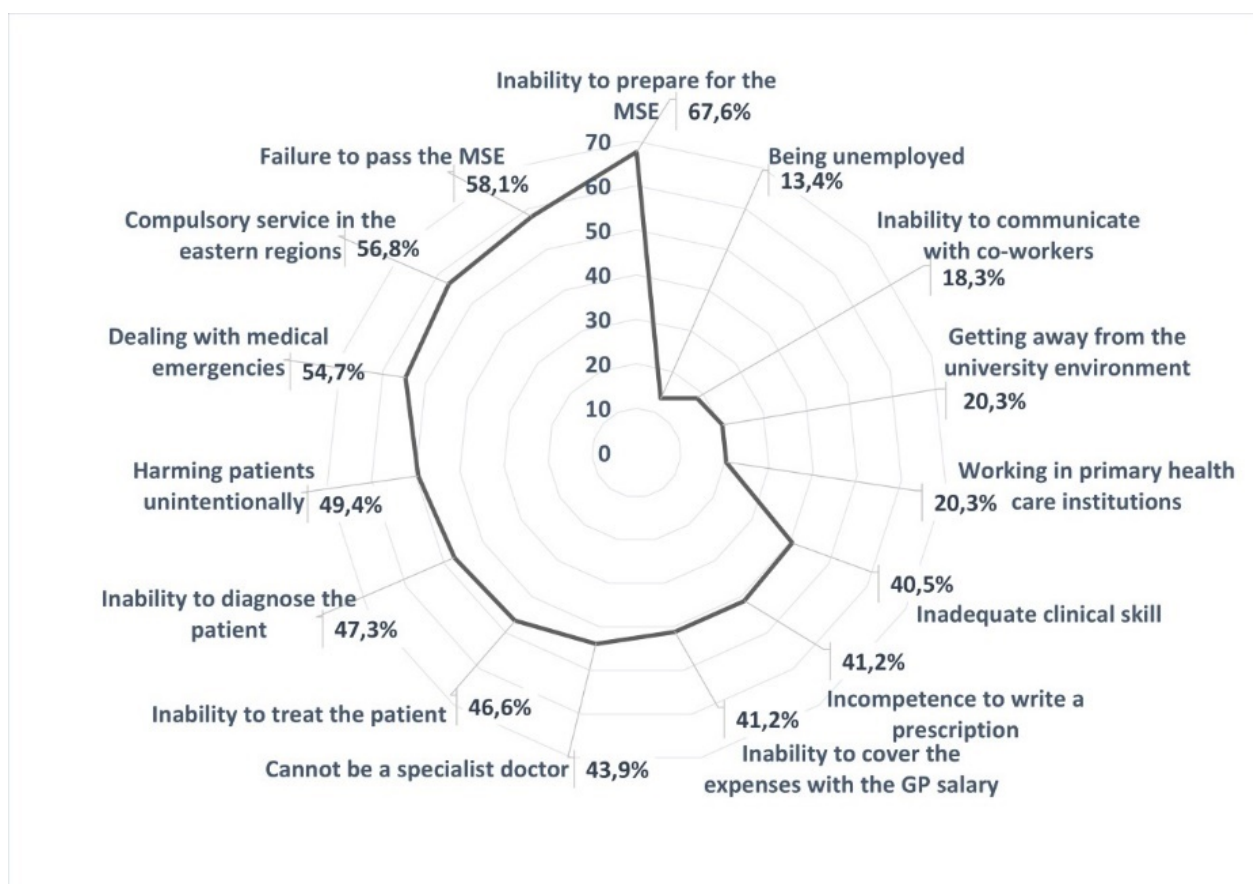
apprehensions about compulsory service in the rural areas and certain professional competence concerns. Interestingly, interns expressed the least amount of concern about 'being unemployed' in the future.

Upon analyzing the distribution of vocational future concerns by gender, it was found that concerns about the MSE remained the primary concern for both female and male interns (Table 2). The primary difference between genders was that female interns reported a higher number of reasons for vocational concern coded as 'high' and 'very high' compared to male interns. Particularly, concerns related to the period of compulsory service, working in the rural areas of Türkiye, diagnostic and treatment inadequacy, and worries about malpractice were significantly higher among female interns ( $p < 0.05$ ). Among male interns, a significant difference was found in their concern about the inability to cover expenses with the general practitioner (GP) salary, which was notably higher compared to the other concerns ( $X^2=5.89$ ;  $p=0.012$ ).

**Table 1:** The reasons for vocational future concerns of the interns.

Reasons	Level of concern				
	Very low	Low	Medium	High	Very high
Inability to prepare for the MSE	6.8	9.4	16.2	25.7	41.9
Failure to pass the MSE	7.4	14.9	19.6	35.1	23.0
Compulsory service in the eastern regions	5.4	14.9	23.0	25.0	31.7
Dealing with medical emergencies	3.4	16.2	25.7	28.3	26.4
Harming patients unintentionally	11.5	18.2	20.9	26.4	23.0
Inability to diagnose the patient	8.1	16.2	28.4	28.4	18.9
Inability to treat the patient	8.1	23.6	21.6	21.6	25.1
Cannot be a specialist doctor	16.2	17.6	21.6	25.7	18.9
Inability to cover the expenses with the GP salary	17.6	18.2	23.0	24.3	16.9
Incompetence to write a prescription	10.1	18.9	29.7	25.7	15.6
Inadequate clinical skill	8.1	21.6	29.7	24.3	16.3
Working in primary healthcare institutions	18.9	24.3	34.5	11.5	8.8
Getting away from the university environment	26.2	25.1	28.4	14.2	6.1
Inability to communicate with co-workers	29.7	27.7	24.3	14.2	4.1
Being unemployed	58.2	23.6	4.8	6.1	7.3

MSE: Medical Specialty Exam; GP: General Practitioner



**Figure 1:** The causes of concern that reported as high and very high levels.

**Table 2:** The high level of concerns according to gender and their reasons.

Reasons	Male (%)	Female (%)	p
Inability to prepare for the MSE	67.7	67.5	0.560
Failure to pass the MSE	55.4	60.2	0.616
Compulsory service in the eastern regions	47.7	63.9	<b>0.036</b>
Dealing with medical emergencies	43.1	63.9	<b>0.009</b>
Harming patients unintentionally	32.3	62.7	<b>&lt;0.001</b>
Inability to diagnose the patient	27.7	62.7	<b>&lt;0.001</b>
Inability to treat the patient	33.8	56.6	<b>0.005</b>
Cannot be a specialist doctor	47.7	41.0	0.257
Inability to cover the expenses with the GP salary	52.3	32.5	<b>0.012</b>
Incompetence to write a prescription	35.4	45.8	0.134
Inadequate clinical skill	32.3	47.0	0.050
Working in primary healthcare institutions	18.5	21.7	0.392
Getting away from the university environment	18.5	21.7	0.392
Inability to communicate with co-workers	13.8	21.7	0.156
Being unemployed	9.2	16.9	0.134

MSE: Medical Specialty Exam; GP: General Practitioner

The subscale scores of medical specialty exam, clinical competence, and socio-economic concern were  $3.28\pm 1.2$ ,  $3.32\pm 1.0$ , and  $2.63\pm 0.9$ , respectively. It was seen that female interns had higher

scores in all three sub-dimensions compare to males (Table 3). However, only the clinical competence anxiety subscale showed a significant difference ( $p=0.001$ ).

**Table 3:** The average scores of the subscales by gender.

Subscale	Male	Female	p
Medical specialty exam	$3.19\pm 1.3$	$3.36\pm 1.1$	0.368
Clinical competence	$3.02\pm 1.0$	$3.56\pm 1.0$	<b>0.001</b>
Socioeconomic	$2.55\pm 0.9$	$2.68\pm 0.9$	0.370

## Discussion

Among the factors contributing to anxiety in medical school students, several were reported to be significant. These include the high expectations of parents and society, the difficulty of medical education, the numerous exams throughout the curriculum, the demanding workload experienced during the transition to the clinical phase, the dynamics of interacting with patients and hospital staff, and the vocational uncertainties regarding the future (1, 21, 22). We considered that the reason the fear of the MSE ranked highest in the anxiety ranking was because our

conducted-on interns only. A significant indication of the widespread fear of the MSE in Türkiye is the substantial amount of time and money that medical students invest in MSE preparation (23). For this reason, the number of MSE preparation courses, which span weeks and come with exorbitant costs, has been steadily increasing, turning it into a thriving commercial market. Regrettably, medical students prioritize MSE studying over acquiring clinical skills in their final years of education, considering it of greater importance.

In parallel to previous studies, it has been observed that medical faculty students prioritize becoming specialists, not only in our country but also in other countries, and earning a high income is the primary factor influencing this choice (24–26). We have found that male interns exhibit higher levels of concern regarding "not being able to become a specialist" and "not being able to receive a satisfactory salary as a general practitioner" compared to female interns. Previous research has indicated that medical students perceive becoming a specialist as advantageous, as it provides opportunities to work in the private sector or in urban areas with a high socioeconomic status. Additionally, it is associated with an increase in social status and the potential for a higher income (13, 27). Furthermore, their exposure will be limited to cases within their specific specialty area, as opposed to a broad range of health problems encountered in primary care emergencies, trauma management, and pregnancy processes (28). However, in order for all of this to happen, it is necessary to overcome the MSE, which is difficult and unlikely to be successful. This explains why anxiety about MSE is high in intern doctors and ranks first among the causes of concern.

More than half of the interns, mostly females, expressed a high level of concern regarding the requirement of compulsory service in the eastern region of Türkiye. The majority of these compulsory service regions are comprised of rural areas with a low socioeconomic status. Working in a rural setting presents challenges related to adapting to the environment, including difficulties in meeting social life expectations, cultural differences, communication barriers, feelings of alienation, and a temporary sense of belonging (29-31). The Eastern and South-eastern Anatolian regions are relatively less developed compared to the western regions (20). In addition to the high rate of burnout among physicians working in these regions, there has also

been an increase in violence against health workers and incidents of national/international terrorism in the past decades (32-34). All these factors can be considered as underlying reasons why intern doctors are concerned about having to work in a region they perceive as risky. When evaluating the concerns of intern doctors regarding the provision of health services, it is evident that in addition to diagnosis and treatment, they also express a high level of concern about issues such as inadequate clinical skills, handling medical emergencies, and unintentionally harming patients. While academic reasons and emotional factors were the primary concerns in the early years of medical education, concerns related to patient care and physical factors have become more prominent in the later years (35-37). In previous studies conducted at Turkish universities, it has been determined that the primary causes of anxiety among medical faculty students in the 5th and 6th grades were "success in MSE," "uncertainty regarding the location of compulsory service," and "managing patients and medical emergencies" (10, 18, 19). This situation can be considered as an indication that medical education in Türkiye emphasizes the establishment of a specialist education infrastructure rather than training general practitioners to provide primary care services. Consequently, this educational model has instilled a sense of inadequacy in medical students regarding general medical matters and has contributed to a lack of confidence in practicing general medicine.

Another noteworthy finding from our study is that vocational concern is significantly higher among female students compared to male students. Studies conducted among medical students have consistently demonstrated that women experience higher rates of perceived stress and anxiety compared to men, with the difference sometimes reaching twice as much (12,38). Women generally exhibit a greater propensity than men to experience chronic stress

and perceive stressors as threatening (39). Furthermore, women tend to have a higher level of awareness regarding their mental health compared to men, and as a result, they may be more inclined to report any related concerns or issues (40).

In the study group, only a small percentage (20%) expressed concerns about working in primary health care centers, whereas 41% of the interns mentioned working as a general practitioner as a major source of high concern. This suggests that interns are dissatisfied with the prospect of working as general practitioners instead of pursuing specialty training. These findings align with previous studies conducted in Türkiye, which have indicated that medical students experience anxiety about working as general practitioners. Furthermore, the majority of students aspire to become specialists, likely influenced by the negative societal perception of general practitioners (10, 13, 17).

Concern levels regarding leaving the university environment, interacting

with colleagues, and unemployment were relatively low for both genders. It is noteworthy that these concerns were not prominent among the interns. The anticipation of beginning specialization training, with the main objective of achieving success in the MSE, could potentially have reduced anxiety associated with these factors.

One of the limitations of our study is its single-center nature, as it was conducted only with sixth-grade students. Additionally, due to the pandemic, we were unable to reach all interns and had to end the study prematurely. While we could have continued the study using an online survey, we decided to conclude it due to concerns that the global anxiety caused by the Covid-19 pandemic might affect the vocational concerns of the interns differently. Therefore, although the generalizability of our findings is subject to debate, they can serve as a reference for more comprehensive analytical studies and qualitative research aimed at exploring the underlying causes of anxiety in greater detail.

## Conclusions

The fact that aspiring to become a specialist physician is a predominant goal and the high level of anxiety regarding being alone with a patient and managing medical emergencies suggest that medical schools may have deficiencies in undergraduate medical education and clinical skills training. Conducting

analytical and interventional epidemiological studies to explore the underlying causes and potential solutions for the vocational concerns will shed light on the development of competency-based medical education and the promotion of mental health among medical students.



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