

# The relationship between residents' interest to their specialty field and their level of anxiety

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## ABSTRACT

**Introduction:** Studies showed that lack of interest in the field of study in the 1<sup>st</sup> year of residency could create stress and then causing psychological problems like anxiety. The purpose of this study was the evaluation of relationship between interest to the specialized field of study and the level of medical residents' anxiety in 2010. **Materials and Methods:** This study was a cross-sectional study. The statistical population of this study was the medical residents (1<sup>st</sup>-4<sup>th</sup> year) from the Universities of Medical Sciences of Isfahan, Gilan, Sanandaj and Kashan (370 residents). They were selected by stratified sampling method proportional to size and were included in this study. Data was collected by using the researcher-made questionnaire of demographic characteristics, the questionnaire about the field of study selection and Zung anxiety self-assessment standard questionnaire. The findings were analyzed by using the SPSS statistical software version 16, descriptive and analytical tests (*t*-test, one-way ANOVA and Pearson). The significance level was considered as  $P \leq 0.05$ . **Results:** The results showed that more than 92% of the surveyed residents did not have anxiety and were in the normal group. There was a significant correlation between the specialized field of interest and anxiety scores of the residents ( $P < 0.05$ ). In particular, the following cases had a direct effect on interest rates and anxiety in residents: the amount of time for visiting and patient care, job stress, time for personal affairs, the ability to predict the agenda and job security. **Conclusions:** The relationship between various factors and anxiety level was corroborated that the residents' interest and success in studying was the result of their choices and management plans to eliminate barriers for the selection of the field and the favorite city by the officials and planners.

**Key words:** Anxiety, interest in specialized field, medical residency

## INTRODUCTION

Mental health is one of the important dimensions of the

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students' health as the future builders of the country. This group is frequently exposed to stress owing to age and social particular situation. Stress can cause the following cases in students: Physical and psychological diseases, dysfunction in performance and compatibility and ultimately lowering the quality of student life. Anxiety can be pointed among the symptoms and mental illness resulting from stress.<sup>[1]</sup> Medical fields and their subsets are among the most popular fields of education in Iran, which attract those who are eager for education. At the same time, academic courses may cause periodic pressure due to the presence of numerous factors and students may be suffering from mental and emotional disorders like the other humans. Factors such as social support, field of interest or disinterest, dysfunctional attitudes, styles of certain documents, personality traits, etc., These cases can be associated with students' mental health.<sup>[2]</sup> In a

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study conducted in Australia in 2002, some comments were collected from the students and interns through meetings and focus group discussions. Finally, it was concluded that the most important causes of stress were included on the following cases: Lack of interest to the field of study, inflexible and overly serious mood, lack of communication skills, poor social support, lack of proper supervision by higher ranking practitioners (teachers), poor and wrong management on the wards of hospitals and universities, lack of sufficient justification for students and interns working in the field of curriculum.<sup>[3]</sup> In fact, studies showed that the lack of interest to the field of study is among the first categories of stress generating and the creation of psychological problems like anxiety. Many studies reported the significant effect of interest in the field of study to academic success. However, the effects of stress have been reported associated with symptoms on academic achievement such as deep feeling of being unhappy, mental weakness, inferiority, fatigue, decreased energy and decreased social functioning academic career.<sup>[4]</sup> In fact, mental disorder is an important issue among the students. Because, on one hand society is wasting money and it reduces their achievement of the success rate and will prevent students from reaching a long-standing scientific and social place.<sup>[1]</sup> Several studies have been conducted in order to evaluate the success and interest in the education of medical students. Some of them like Sadr Arhami *et al.* study only focused on considering the students' satisfaction. The results of the study which, reviewed the attitudes of medical students' courses and future career, showed that 89% of the students recommended to others to study medicine.<sup>[5]</sup> Some other studies, such as NikNam and Hejazi study compared the students in terms of psychological satisfaction associated with their field of study. The study showed that the interest into the field of study affected the psychology dimensions. Finally, many studies reported that the interest in the field of the study was an important mental satisfaction factor<sup>[6]</sup>. For example, it could be noted to Fattahi *et al.* study results, among the factors associated with satisfaction, the most affected factors (very high and high) corresponded to the "opportunity to serve people and society (76%)," "adequate social status (65.7%)" and "interest in the field of study prior to be selected (65.6%)."<sup>[7]</sup> The results of a study on 150 medical and nursing students (entry of 1998-2001) of the Jahrom Medical University of was revealed that 75% in unsuccessful group and 39.4% in succeeded group felt some degrees of mild to moderately severe depression. The findings of a conducted research entitled as "comparison of depression, anxiety, stress and quality-of-life of male and female students living in university dormitories" showed that there was a significant relationship between the interest in the field of study with depression and anxiety.<sup>[8]</sup> As the results of various studies represented that interest to the field of study was associated with the risk of mental illnesses. Given that, the medical residency specialized field has not a correct procedure like many other professional groups in our country. It also has a very destructive impact of mental disorders and especially the anxiety of residents on their job performance. The aim of this study was the evaluation of

relationship between interest to the specialized field of study and the level of medical residents' anxiety in 2010. It was performed to have a step toward a more informed choice in the very sensitive stage of medical residency.

## MATERIALS AND METHODS

This cross-sectional study was conducted in Isfahan University of Medical Sciences in 2010. The statistical population of the study was the medical residents (1<sup>st</sup>-4<sup>th</sup> year) from the Universities of Medical Sciences of Isfahan, Gilan, Sanandaj and Kashan (370 residents). They were selected by stratified sampling method proportional to size and were included in the study. The data was collected by using the researcher-made questionnaire of demographic characteristics, the questionnaire about the field of study selection and Zung anxiety self-assessment standard questionnaire. The questionnaire of the field of study selection included 15 items about major features of various medical specialties that was used in England by Gale and Grant.<sup>[9]</sup> It has been confirmed in Iran by a study of the perspective of specialists and residents.<sup>[10]</sup> The above-mentioned 15 items were those cases, which will be involved during the residents education and in their future duties. The residents responded to the effective parameters of interest to the field of study in a range of five options as follows: Apathy, decreased interest, no impact, increase in interest and interest. Zung questionnaire is a common tool for assessment of anxiety disorders among the researchers of various nationalities. It was developed in 1970. Based on the results of Jani *et al.* study, Zung anxiety self-assessment scale is a useful tool for measuring the anxiety because the obtained results from the clinical interview showed that approximately 75% of subjects who were diagnosed with the Zung scale had the required diagnostic criteria for an anxiety disorder. Zung anxiety self-assessment scale is a test with twenty questions. Each question has one to four scores and the test can be completed in 5-10 min. Its sensitivity and reliability is high.<sup>[11,12]</sup> Necessary co-ordinations have been done with the universities after obtaining the required permits for completing the questionnaires. The research was conducted after specifying an interface in each university and they were provided necessary training on how to perform the inquiry such as explanations for the residents on research projects, how to complete the questionnaire, obtained information on confidentiality, trust and cooperation of the residents. Questionnaires were sent to them and then the data was extracted. The gathered data was analyzed with the aid of SPSS software version 16. *T*-test, one-way ANOVA and Pearson test were used in order to examine the relationship between anxiety and demographic characteristics.

## RESULTS

Out of 400 distributed questionnaires, 370 residents (92.3%) completed the questionnaires. The specialized fields of the studied residents were shown based on three groups of internal, surgery and paraclinical in Table 1.

Figure 1 showed the results of the completed field of study selection questionnaire by the residents in different specialized groups based on interest rates affected the residents in their field. In general, the residents believed that the most and the least effective factors in the field interest were “to be tangible and visible about patient’s care” and “existence of job security,” respectively. The mean of interest rate to 15 items of questionnaire No. 2 in various specialized fields was significantly different ( $P = 0.026, F = 3.674$ ).

### Interest to field of study and anxiety

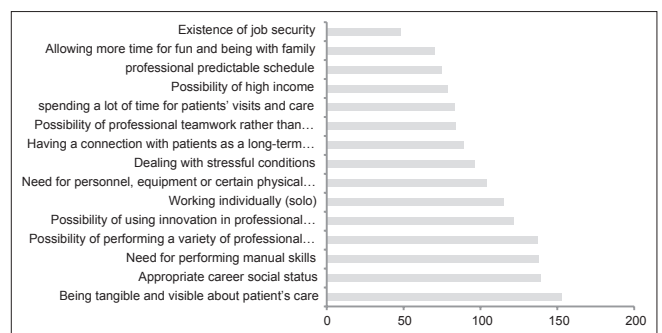
A total of 259 residents (70%) were studying in three fields of study interest. The mean of the anxiety score in the studied residents with the mean of responses to the question of “whether accepted in the first three fields of your favorites?” had a negative relationship. In fact, the mean of the anxiety score of the residents was lower who answered “yes” to this question, but the difference was not statistically significant.

The relation of the results of the field of specialization interest questionnaire with the anxiety score of the resident.

The performed investigations on the results of the field of specialization interest questionnaire with the anxiety score of the residents showed that in total, the residents who declared the items in their specialized fields caused apathy or loss of interest in their specialty had higher anxiety scores. ( $P = 0.018$ ). The cases with negatively correlated relation with the mean of anxiety scores were as follows: Spending a lot of time for patients’ visits and care, dealing with stressful situations, allowing more time for fun and being with family, professional predictable schedule and existence of the job security.

**Table 1: Frequency distribution of the studied residents according to three groups of internal, surgery and paraclinical**

Specialty, field	Frequency	Percentage
Internal	184	49.7
Surgery	151	40.8
Paraclinical	35	9.5
Total	370	100



**Figure 1: Frequency of effective factors in the specialized fields of interest from the perspective of the residents**

## DISCUSSION

One of the most important issues that should be considered for the development and educational success is interest. Many students leave education because they are not interested to their field of study and due to this fact some others cannot be successful in their field.<sup>[13]</sup> The interest of the residents to their field of the study was measured in two ways:

- The results of the response to their first three favorite fields of the study were compared with the anxiety scores. The mean analysis showed that the mean anxiety score of the residents who were not accepted in their first three fields of interest was higher. This relationship was not statistically significant. As it was shown in the results, the residents had various responses in the different professional groups. The residents of heart and skin (100%) as the most and the residents of infectious diseases (25%) as the lowest were those who have been accepted in the first three fields of their interest [Table 3]. The results were similar with other studies conducted in this area. in general and in an overall look, it could be said that in both of the studies, the fields of ophthalmology, cardiovascular diseases, neurological diseases and ear, nose and throat (ENT) were the most popular field of studies. On the other hand, the fields of infectious disease, psychiatry and internal diseases had the lowest popularity among the residents. The mentioned analysis compared the groups of internal, surgical and paraclinical and expressed that 77% of surgical residents and 59% of the internal residents have been accepted in their first three fields of interest. This difference in the level of 0.05 was statistically significant
- In order to have a more detailed review, the interest rates in residents about their field of study was examined with scores of anxiety. The residents would be involved with the mentioned cases during their education and future career. In other words, the interest to these items would assist the residents to find a better match with their expertise. As it was expected, the results of this study also indicated that the mean of interest rate to different cases of the field of specialization interest questionnaire in various specialized fields were significantly different. In a similar study in reviewing the perspectives of Sari Faculty of Medicine graduates, the most important selection factors in the field of study have been the interest in helping people and having the desired skills and abilities. In this study, job independence for men and predictable agenda for women were more important. It is interesting that the management, status and financial issues have had the least importance in the selection of the study field and in their education.<sup>[10]</sup> The survey of the results of the present study was performed based on different fields of the study with different priorities, apparently due to Table 2 and regardless of the details. Next, a more detailed description of the items would be reported that changed the residents’ anxiety scores. The results showed that residents who had no interest in “spending a lot of time for patients’ visits and care” had higher anxiety scores.

**Table 2: Prioritization of 15 items of the questionnaire based on the residents' perspective on 18 studied specialized groups**

Specialties	Internal	Surgery	Obstetrics and gynecology	Cardiology	Skin and hair	Kidney	ENT	Psychiatry	Anesthesia	Pediatric	Radiology	Ophthalmology	Infection	EMS	Pathology	Neurology	Neurosurgery	Orthopedics
First cases	5	7	14	15	14	7	14	15	9	11	3	7	14	5	6	15	8	5
	1	5	14	14	11	14	7	9	3	15	11	14	7	7	11	15	11	14
Second cases	10	6	6	6	4	4	4	6	13	13	13	12	13	12	10	10	12	6
	13	2	12	9	9	6	11	15	8	8	2	13	10	6	1	9	1	12
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ENT = Ear, nose and throat, EMS = Emergency medical services, 1 = Need for personnel, equipment or certain physical space to perform professional activities, 2 = Spending a lot of time for patients' visits and care, 3 = Working individually (solo), 4 = Having a connection with patients as a long-term connection, 5 = Possibility of performing a variety of professional activities, 6 = Allowing more time for fun and being with family, 7 = Need for performing manual skills, 8 = Possibility of using innovation in professional activities, 9 = Possibility of professional teamwork rather than individual work, 10 = Possibility of high income, 11 = Dealing with stressful conditions (such as a crisis, emergency decisions about patients, etc.), 12 = Predictable professional schedule, 13 = Existence of job security (ensuring about the confidence and career prospects), 14 = Being tangible and visible about patient's care, 15 = Appropriate career social status (occupational prestige)

**Table 3: Percentage of acceptance in the first three favorite fields of study in the studied residents**

Speciality field	Percentage
Internal	54
Surgery	73
Obstetrics and gynecology	72
Cardiovascular	100
dermatology	100
Kidney and urethral	60
Ear, nose and throat	88
Psychiatry	47
Anesthesia	51
Children	66
Radiology	95
Ophthalmology	85
Infectious diseases	25
Emergency medicine	70
Pathology	92
Neurosurgery	81

Similar study conducted on 3700 residents showed that there was constant connection with patients in all disciplines. The ranking among the specialized fields of the study represented that the connection with the patients was the most in the field of internal diseases and the least with the field of pathology.<sup>[9]</sup> According to the above mentioned results and the present study, the amount of time spent for visiting and direct care of the patients (in each specialty) should be taken into consideration as one of the most effective cases for the selection of the field of study. Residents who considered the case of “allowing more time for fun and being with family” for increasing the interest in their specialty had lower anxiety scores. Another study conducted in this area indicated that the residents’ opportunities for personal affairs in all professional groups were very low. Mentioned study results showed that in spending time for leisure and family, dermatology and psychiatry residents groups had the most and cardiology, gynecology and the internal diseases residents groups had the least.<sup>[10]</sup> Therefore, before entering to the field of study, the residents should be aware of the conditions prevailing in each field in order to have the correct choice or preparing themselves for compliance with the conditions. Bahreinian *et al.* study conducted in the field of residents stress showed that job stress was one of the most important sources of stress in residents.<sup>[14]</sup> The results of Hadadgar also announced that stress was the most prominent feature in all specialized fields. The residents in mentioned study had stress in different groups from the most to the least as follows.

Anesthesiologist - Neurosurgery - Obstetrics and Gynecology - Cardiology - General Surgery - Orthopedic - ENT - Children - Internal Diseases - Neurology Diseases - Ophthalmology - Psychiatry - Kidney and Urethral - Pathology - Infectious Diseases and the Skin.

In this ranking, the first five groups had a greater mean distance than the other groups. The skin specialty group very was obviously lower than the average.<sup>[12]</sup> Stress is a major cause of psychopathology and an accelerator or starter of mental illnesses.<sup>[14]</sup> The study results showed that residents who were not interested to “dealing with stressful conditions (such as a crisis, emergency decisions about patients, etc.)” had higher anxiety scores. Medicine is among the high-stress jobs with too much associated stresses. Therefore, the residents should be trained in methods of coping with stress and anxiety. In this study, the residents who considered “predictable professional schedule” as an important cause in their field of specialty had lower anxiety scores. Another study,<sup>[10]</sup> showed in this field that the residents’ point of views in looking for predictability in scheduling in different groups from the “unpredictable professional schedule” toward the “predictable agenda,” were: Obstetrics and Gynecology, Pediatrics, Anesthesia, Surgery, Neurosurgery, Kidney and Urethral, Orthopedic, Cardiovascular, Psychiatry, ENT, Neurological Diseases, Internal Medicine, Infectious Diseases, Ophthalmology, Pathology and Skin. Despite, the choice of the study field was predictable, but the results of this study suggested that there were still residents who work in their field and have not been consistent yet, so it was followed by some degrees of anxiety. The results showed that the residents that knew “existence of job security (ensuring about confidence and career prospects)” to increase their interest in their field of specialty had lower anxiety scores. Job security was one of the most important sources of stress in residents.<sup>[14,15]</sup> The results of the conducted study by Maroufi in the investigation of the symptoms of depression in medical students and physicians represented that one of the main reasons for the symptoms of depression in our physicians society (especially interns and general practitioners) were as follows: Lack of financial needs, the ambiguous status of employment and lack of job-security.<sup>[16]</sup> The results of many other similar studies showed significant differences for the anxiety scores of the studied groups by the interest on the field of study that the mean anxiety scores of those who were not studied in their favorite field of interest was higher than the other groups. In other words, the students without interest in their field of the study were suffered from problems such as depression or were less healthy.<sup>[8,17]</sup> Lack of academic achievement could start mental disorders. In fact, most of the students who are experiencing academic failure, frequently encountered with problems and crises in life. There were anxiety, depression, low self-esteem and decreased motivation in most of these people.<sup>[8]</sup> The results of Hadadgar study about the field of interest of the students explained that if academic field of studies selection from interest and propensity, it would improve the community. On the other hand, it was characterized that lack of interest of the people in other fields of the study would be negative and destructive. This topic seemed to be very simple, but it is not very easy to offer a simple solution to fix it. The category of choosing the field of study is important and effective and more consideration should be taken in understanding, family and community.<sup>[18]</sup>

### Constraints and administrative problems

Diagnosis of psychiatric disorders (including anxiety) should be based on clinical interviews. Performing this method (i.e., participation of 400 residents in five different cities) was almost impossible and conducting this study could be a trigger for more detailed studies in this field. Unofficial information in the area of anxiety in residents also suggested that many of them were taking anti-anxiety drugs. In the present study, the majority of the residents did not answer this question. This case was one of the limitations of this study.

### Suggestions

In order to consider the residents’ suggestions in connection with the method of residency adoption, they were asked to express their contents in this regard in the questionnaire. The residents’ suggestions were divided in two separate groups of test conditions and general suggestions.

#### Test conditions

Elimination of fraud, stop selling the questions/elimination of quotas such as quota management, quota areas and so on/preparing standardized and applicable questions/applying the educational background of General Practitioner (GP) in the test/connecting the accepted field with the same subject test score/applying the professional medical records/applying the educational background of internship and school in the test/admission to be based on the interest to the field of specialty/localization of the residents as much as possible/residents acceptance in different fields of study based on local and community needs/elevating the levels of small universities or removing their residency program/quota allocation to deprived areas according to the required courses with a long-term commitment to serve in the relevant areas/admission to be based on the research background/review of the sex ratio in various academic disciplines based on the community requirements/performing the test once every 6 months/realistic choice of resources/performing the exam after finishing the GP and if the person was not accepted, going to the plan should be considered.

#### General suggestions

Improvement the professional and social status of GP/performing traditional medicine and pain medicine courses for general practitioners in order to reduce the demand for residency.

## CONCLUSION

According to this fact that the medical profession is very sensitive, the factors that could raise anxiety in residents should not be simply passed along.

The relationship between various factors and anxiety level was corroborated that the residents’ interest and success in studying was the result of their choices and management plans to eliminate barriers for the selection of the field and the favorite city by the officials and planners.

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