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Evaluation of the orthopaedics and traumatology resident education in Turkey: A descriptive study

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ABSTRACT

Objective: The objective of this study is to describe the current situation regarding the training, working conditions, future plans, fields of interest and satisfaction of orthopaedics and traumatology residents in Turkey.
Methods: A descriptive survey questionnaire consisting of 24 questions was designed to identify the problems and solution suggestions concerning training of orthopaedic residents. All orthopaedics and traumatology residents who took the 2013 Progress Testing for Speciality in Medicine (UEGS) held by Turkish Orthopaedics and Traumatology Education Council (TOTEK) were surveyed in the class at the end thereof as well as the young orthopaedic surgeons who were reached through the email groups of Turkish Society of Orthopaedics and Traumatology – Residents and Young Attendings Council (TOTBID-AGUH).
Results: A total of 725 residents and 132 young attendings were surveyed. The most outstanding answers are as follows: 62,7% of the respondents replied to the question "Is there a training program/Is it being applied" as "yes/yes". It was found out that 94,3% of the respondents wanted to be involved in a rotation abroad. The "patient care" was the most common answer, with a ratio of 36,9%, to the question "What's the priority of the department you are studying in?". Regarding work conditions, "many emergency on-calls" was found to be the most important parameter affecting life conditions ($p < 0.05$).
Conclusion: Aiming to identify the challenges that orthopaedics and traumatology residents in Turkey face as regards their training, this survey stands as a pioneering study with a high participation rate. Analysis of survey data highlights the importance of several key factors such as the development of training programs and increasing the time spent with academicians as well as spreading and promotion of log book application.

Introduction

The medical specialist training can be defined as a program that introduces the knowledge, expertise and attitude models required for a specialist doctor to perform his/her job. The training program should be presented under the guidance and supervision of qualified academicians and provide the personal and professional development of residents while helping the patients get a safe and appropriate medical service. In many countries around the world, efforts are underway to make improvements in the fields of undergraduate education, residency and continuing medical education. Accordingly, the World Medical Education Federation has been carrying out several studies with a view to setting minimum standards for the training of specialists.[1–3] In the United States of America, orthopaedic training programs have been guided by the American Board of Orthopaedic Surgery (ABOS) since 1934.[4] According to the ABOS, there are 3 basic purposes of orthopaedic

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residents' training programs; i) training on common diseases and situations related to the orthopaedic surgery; ii) training on basic and clinical sciences, iii) training on the orthopaedic surgery techniques and procedures. However, the content on the training is far from standardized and differs substantially among programs.

Turkish Orthopaedics and Traumatology Education Council (TOTEK), which operates under the Turkish Society of Orthopaedics and Traumatology (TOTBID), carries out studies on core training programmes as well as designing log books and offering a range of activities including institutional visits and interim exam that is the Progress Testing for Speciality in Medicine (UEGS).

With this study, it is aimed to receive the opinion of orthopaedics and traumatology residents and young attendings in Turkey regarding their training, working conditions, future plans, fields of interest and satisfaction through a questionnaire and to describe the current situation under the light of the data obtained.

Materials and methods

A descriptive survey questionnaire was designed to identify the problems and solution suggestions concerning training of orthopaedic residents in Turkey in collaboration with the TOTBID, TOTEK and TOTBID-Residents and Young Attendings Council (TOTBID-AGUH). This survey has been applied to all orthopaedics and traumatology residents who attended the UEGS held by TOTEK in May, 2013 and young attendings with up to 5 years of experience through TOTBID-AGUH mail groups. The young attendings were asked to answer the questions considering the situation of the educational institution they graduated from. The total number of respondents to the questionnaire is 857, including 725 of 811 residents in Turkey who pursue their orthopaedics and traumatology degree and 132 young attending who were reached through the email groups. Consisting of 24 questions, the questionnaire was divided into 5 subgroups based on a subject-wise question distribution to figure out; 1. Demographic properties of respondents; 2. Problems of residents in orthopaedic training; 3. Fields of interest/future plans of orthopaedics residents; 4. Problems concerning work conditions and 5. Satisfaction levels of orthopaedics residents (Table 1). The survey was modelled on the similar national and international studies conducted in orthopaedics and other branches of medicine in previous years.[5,6]

Of all, 18 were multiple choice questions whereas the remaining 6 were scored on a 5 point Likert probing the perception about the training for specialists. Responses were rated from minimum 1 to maximum of 5 (e.g.: 1 = I strongly disagree, 2 = I disagree, 3 = I don't have an idea/I'm unsure, 4 = I agree, 5 = I strongly agree).

In the analysis of the survey data, the chi square test method was used to assess the satisfaction levels with the medical residency duration, working hours, type of institution and economic conditions. Furthermore, the IBM® SPSS® Statistics 20 (Statistical Package of Social Science) was used for the statistical analysis of the responses to the Likert scale questions designed to measure respondents' attitudes.

Results

The analysis of the survey results revealed that 545 (63,6%) of the respondents were studying in a university while 312 (36,4%) in training and research hospitals. It was found out that orthopaedics and traumatology was ranked among the first three choices of 657 respondents (76,6%) and among the succeeding choices for the rest in the Examination for Speciality in Medicine (Table 2).

Table 1
Survey questions.

Demographic properties
1. Where do you work?
2. What rank is it in your programme choices?
Training
3. Is there any training program?/Is it being applied?
4. Is there a log book application available/Is it being applied?
5. Which courses have you attended?
6. Does the testing for speciality measure your knowledge?
7. Would you like a rotation abroad?
8. Would you like a rotation in the country?
9. Which year did you get your thesis on?
10. Which activity contributes mostly in the training?
11. Comparison of the contribution of non-surgery activities in the training
12. Frequency of one-to-one study with academicians
13. Comparison of frequency of activities conducted together with the academicians
14. Comparison the impact of activities conducted together with the academicians on residents' training
15. What is the priority of the department you are studying in?
Interests/future plan
16. Interests
17. Plan after proficiency
Working conditions
18. Factors affecting life conditions
19. How many hours a day do you work?
20. Factors affecting work conditions (academic)
21. Factors affecting work conditions (social)
Satisfaction
22. Are you happy with your life?
23. What is the role of your work in your dissatisfaction?
24. Are you happy to be working in your department?

Training

The first question under the training subcategory “Is there a training program/Is it being applied?” was replied as “yes/yes” by 62,7%, “yes/no” by 17,7% and “no” by 18,1%. The majority, with a 46,9% ratio replied to the question “Is there a log book available/is it being applied” as “yes/no”.

Respondents were asked to check the courses they attended from a given list including Basic Sciences Research School (BSRS), Basic Trauma Course (BTC), AO Course (AOC), Basic Arthroscopy Course (BAC), Basic Arthroplasty Course (BAPC), Ilizarov Course (ilizarovC), Advanced Trauma Course (ATC), Advanced Arthroscopy Course (AAC), Advanced Arthroplasty Course (AAPC), Basic Spine Course (BSC). The BSRS had the highest response rate with over 40% and followed by BTC, AOC, BAC, BAPB, ilizarovC, ATC, AAC, AAPC and BSC respectively.

The majority of the respondents (30,8%) replied the question “Does the board examination measure your knowledge?” as “I'm unsure”.

The analysis of responses to the questions on national and international rotations showed that 80,4% of the residents had a positive attitude towards being involved in rotation at home while 94,3% in the rotation abroad:

The surgeries attended were reported as having the highest impact on education with a ratio of 53,7% which was followed by

Table 2
Demographic data.

Questions	Number	Ratio (%)
Work place		
• University	545	36,4
• TRH	312	63,6
Ranking in the programme choices		
• First three choices	657	76,6
• Other	200	23,4

TRH: Training and Research Hospital.

case presentations with 20,8%, conventions and seminars with 8,5% and training courses with 5,8%.

The contribution of non-surgical training programmes into the education was rated by the respondents from 0 to 5. When the average values employed for each programme were calculated and compared, the contribution of one-to-one study with academicians and training courses was found to be higher enough to make a statistically significant difference ($p < 0.05$).

While 32,1% of the respondents reported that they worked one-to-one with a academician almost every day, the frequency of the working environment shared with academicians were rated by the respondents from 0 to 5. The average values for each activity were calculated and compared revealing that the residents met the academic members mostly during surgeries, visits and student consultations ($p < 0.05$).

The question "What's the priority of the department you are studying in" was replied as "patient care" by 36,9% and "doing research" by 7,7%.

Fields of interest/future plans

22,8% of the respondents reported to be hesitant with regard to their field of interest in orthopaedics, while arthroplasty and sports surgery succeeded with 18,1% and 13,9% respectively. According to survey results, 25,1% of residents told that they would pursue their career by working in public hospitals while 23,7% doing subbranch, 18,6% in universities and 14,1% in private clinics.

Working conditions

Concerning the life standards of the respondents, assumptions such as "I have many emergency on-calls", "I suffer from economic problems", "working hours are too long" were rated on a five point scale ranging from "I strongly disagree" (0) to "I strongly agree" (5). Average values were calculated and compared. The results showed that "long working hours" had more impact on life conditions making a statistically more significant difference than the other two ($p < 0.05$) (Fig. 1). The question "How long do you work every day?" asked under same sub category was replied as between 8 and 12 h by 76,2%.

The respondents were asked to comment on their academic environment through assumptions such as "technical equipment of the surgery room is sufficient", "I have access to literature", "the number of trainer is sufficient", "the knowledge of trainer is sufficient", "the time spent with academicians is sufficient", "technical equipment of my clinic is sufficient" rated between "I strongly disagree" (0) – I strongly agree (5). The results showed that "the technical equipment of clinics" and "time spent with trainer" were deemed insufficient ($p < 0.05$) (Fig. 2). When all assumptions are taken into account for the analysis of responses to the question concerning the assessment of social conditions in clinics, working together with the other residents in harmony indicated a high level of positive perception making a statistically significant difference ($p < 0.5$). Furthermore, the respondents were found to be more worried with regard to the equal opportunities and the extent of freedom provided in clinics ($p < 0.05$) (Fig. 3).

Satisfaction

Lastly, the respondents were asked "Are you happy with your lives?", "How is your dissatisfaction affected by your work?" and "Are you happy to be working in your department?". 44,8% of the respondents replied as "there are many things I am not happy about" and 31,2% as "quite a lot". 13,7% reported that their dissatisfaction was completely due to the work while 35,6% of the

Fig. 1. Factors affecting living conditions. Assumptions such as "I have many emergency on-calls", "I suffer from economic problems", "working hours are too long" were rated on a five point scale ranging from "I strongly disagree" (0) to "I strongly agree" (5). Average values were calculated and compared. The results showed that "long working hours" had more impact on life conditions making a statistically more significant difference than the other two ($p < 0.05$). FNS: I have many emergency on-calls, MS:I suffer from economic problems, UCS: Working hours are too long.

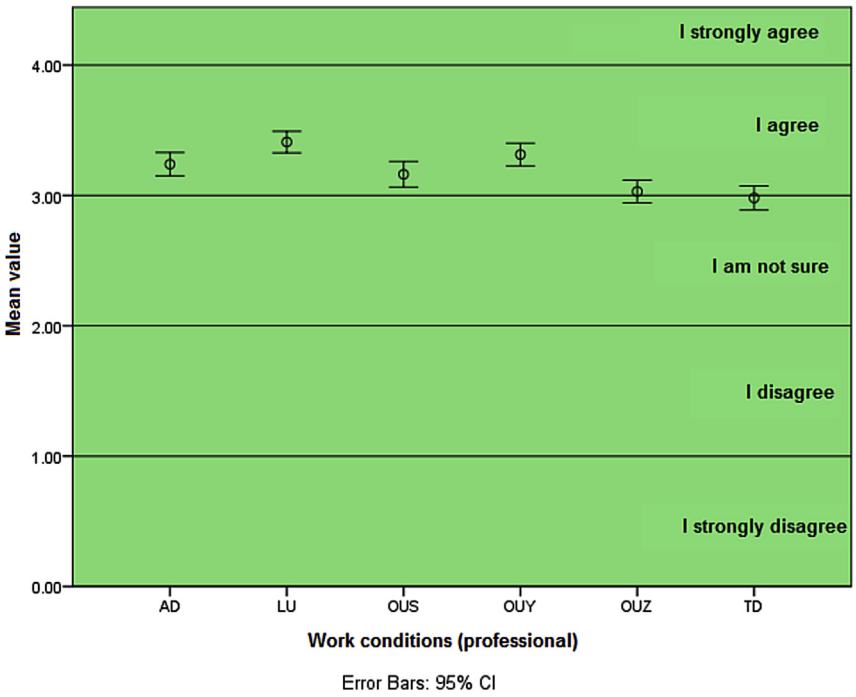

Fig. 2. Factors affecting work conditions (academic). The respondents were asked to comment on their academic environment through assumptions such as "technical equipment of the surgery room is sufficient", "I have access to literature", "the number of academicians is sufficient", "the knowledge of trainer is sufficient", "the time spent with academicians is sufficient", "technical equipment of my clinic is sufficient" rated between "I strongly disagree" (0) – I strongly agree (5). The results showed that "the technical equipment of clinics" and "time spent with academicians" were deemed insufficient ($p < 0.05$). AD: Technical equipment of the surgery room is sufficient, LU: I have access to literature, OUS; The number of trainer is sufficient, OUY: The knowledge of trainer is sufficient, OUZ: The time spent with trainer is sufficient, TD: Technical equipment of my clinic is sufficient.

respondents indicated two third of their dissatisfaction caused by work. The rate of those who were totally satisfied to be working in their department was 14,9% whereas 28,3% reported that they were unsure. Another analysis showed no statistically significant difference between satisfaction and the medical residency duration, working hours and type of institution ($p > 0.05$), while the economic conditions constituted the only significant difference ($p < 0.05$).

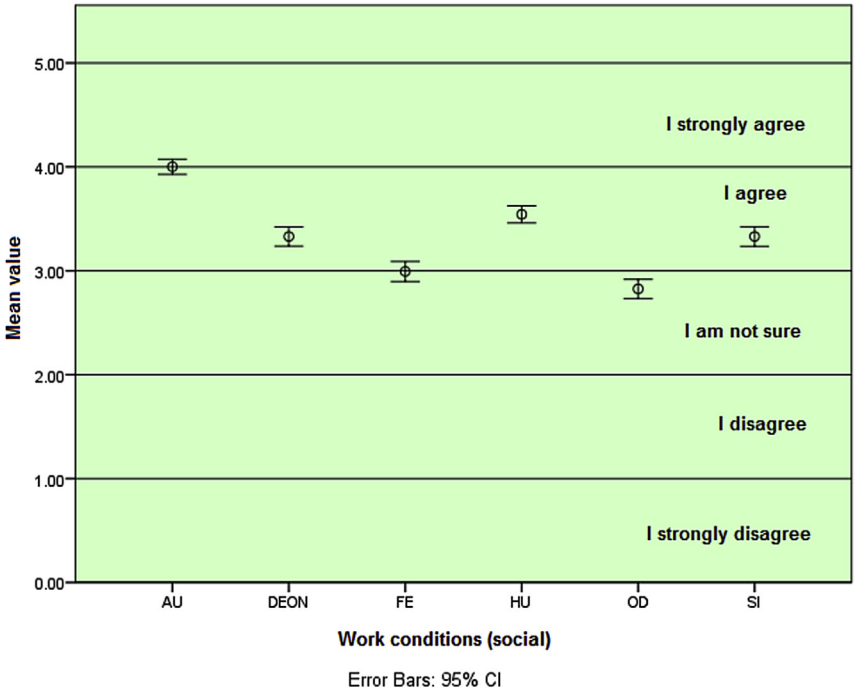

Fig. 3. Factors affecting work conditions (social). When all assumptions are taken into account for the analysis of responses to the question concerning the assessment of social conditions in clinics, working together with the other residents in harmony indicated a high level of positive perception making a statistically significant difference ($p < 0.5$). Furthermore, the respondents were found to be more worried with regard to the equal opportunities and the extent of freedom provided in clinics ($p < 0.05$). AU: I work in harmony with my fellows in my clinic, DEON: Ethics and deontology are important in my clinic, FE: My clinic offers equal opportunity, HU: I work in harmony with lecturers in my clinic, OD: The extent of freedom given to me while working satisfies my expectations, SI: Social relations between people working in my clinic are at a satisfactory level.

Discussion

This study was carried out in collaboration with TOTBID, TOTEK and TOTBID-AGUH. Aiming to identify the challenges that orthopaedics and traumatology residents in Turkey face as regards their training, this survey stands as a pioneering study with a high participation rate. The participation rate is much higher than those in the similar national and international surveys with the involvement of 725 of 811 residents in Turkey who pursue their orthopaedics and traumatology degree in Turkey and of 132 young attending who were reached through the email groups.

Analysis of survey data highlighted the need for a revision and rearrangement of several factors including the development of training programs.

It is evident from the questions concerning the challenges that orthopaedics and traumatology residents in Turkey face as regards their training that the practice of log book, a document which is drawn up pursuant to the Article 24 "assessment of the resident" of the Regulation on Medical Speciality prepared by TOTEK for the standardization of education and which covers all activities performed by specialist students during their education, is unlikely to be sufficient. The log book application is believed to enable the standardization of training. In this manner, Accreditation Council for Graduate Medical Education (ACGME) and ABOS are carrying out similar studies in the United States.[7]

The Article 24 "assessment of the resident" of the Regulation on Medical Speciality enables residents to receive training in a foreign institution for a period up to one year. It is found that nearly all of the respondents are in favour of the international rotation. However, taking advantage of such an international training largely depends on scholarship opportunities and the attitude of supervisors. The previous experiences and studies carried out in orthopaedics and other surgery branches have shown that international rotation programs had a positive impact on residents' training.[8–13]

The question "What's the priority of the department you are studying in" was replied as "doing research" by 7,7%. However, residents who create publications during their speciality training are supposed to develop many skills in this field and to continue these publications during their professional career.[14]

The value given to the research has been decreased because of the lack of coordination between education-research policies and medical service policies. Precautions should be taken to promote research activities in universities and training hospitals.

The analysis of responses to the questions regarding their work conditions has revealed that the respondents considered the technical equipment of their clinics insufficient. The skills based resident training programs which have recently become an upcoming trend throughout the world aims at increasing surgical technique and skills of the residents through the use of plastic models, simulators and cadavers. Such laboratories are believed to increase the familiarity of the residents with the surgical equipment, procedures and techniques at low risk and costs.[15] Employment of the Clinical Skills Laboratories practices into the standard training program of the residents would serve to increase their motivation and surgical skills.

This survey highlights the need for the revision of certain parameters in the training of orthopaedics and traumatology residents. We think that the solution of these problems is depended on increasing the level of standardization for the training programmes and featuring accreditation efforts to provide supervision thereof.

In Turkey, efforts are ongoing to improve the quality and ensure the standardization of orthopaedic residents' training under the guidance of the TOTBİD and TOTEK. TOTEK carries out a number of studies to figure out the current situation of the institutions that conduct training activities in Turkey and makes public the results through the periodic books it publishes. While carrying out studies regarding the training of residents, it must be kept in mind that "the future of orthopaedics depends on the success of residents' training programs" and nationwide training programmes should be submitted to the opinion of residents through the similar surveys to be conducted in different periods of time.

Disclosure

During 2013 UEGS interim Exam when this survey was conducted, one of the authors Gazi Huri was serving as the president of TOTBID-AGUH Council, Yusuf Sertan Cabuk as the secretary of TOTBID-AGUH Council, Volkan Oztuna as the president of TOTEK, Onder Aydingoz as the president of TOTBID and Alpaslan Senkoylu as the board member of TOTEK.

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