Opinions of Otorhinolaryngology Residents about Their Education Process

Original Investigation

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Abstract

Objective: Our study was planned to get the views of residents about the Otorhinolaryngology (ORL) education process and to enlighten the studies to make this process more effective.

Methods: A questionnaire was sent to the residents who were still in the residency program in all education clinics via "Google Drive". Seventy-four of 354 residents responded and the answers were evaluated electronically.

Results: Fifty residents (67.56%) gave an affirmative answer to the question about the use of "Resident Log Book" and no difference was seen among the clinics. While 9 residents (12.16%) were reporting that they did not read any scientific papers, 43 (58.1%) reported they read less than three per month. Forty-one residents thougt that they were having a good and sufficient education. Seventeen residents (51.51%) who thought they were not having a sufficient education reported that the education period should be longer. When they were wanted to evaluate the education process, while 66 of them (89.18%) said "Exhausting", 52 (70.27%) said "Stressful", it was seen that the ones who said "Instructive" and "Rewarding" were 26 (35.13%) and 17 (22.97%) respectively. Further, 43 of 48 residents (89.58%) who were over the third year of their residency program indicated that they were unable to perform at least one procedure listed in the questionnaire after finishing their education.

Conclusion: This study is important because it is the first study about the opinion of ORL residents and will help determine the current status in Turkey. This study will be useful for the preparation of educational programs and guides in the future.

Keywords: Education, otorhinolaryngology, questionnaire, resident

Introduction

According to the history of ear, nose, and throat (ENT) medicine on the website of the Turkish Otolaryngology and Head and Neck Surgery Society (ORL-HNS), its scientific and educational history in Turkey began when Civani Ananyan started givin ENT lessons in 1878 and when Şefik Pasha became the head of the first ENT clinic in 1890. Its development continued via contacts with European countries in the early 1900s and with the opening of new ENT clinics (1). The basic approach to surgical training has been reported to be the master–apprentice relationship defined by Halsted and Osler in the late 1800s. Although educational resources have currently become diversified with training videos, simulations, and skill labs, the basis of surgical training is still the master–apprentice relationship (2-6). In addition to all skills, such as the power to interpret theoretical knowledge, that all doctors need to have, manual skills, by which they can effectively and safely apply many alternative methods, should also be taught to residents. The master–apprentice relationship is becoming more important in surgical medicine departments (2, 3, 6, 7).

Studies have often been performed on the effectiveness of the services offered and treatments applied in all areas of medicine and on the satisfaction of patients. However, the opinions of those providing these services are usually ignored, and very few studies have been conducted on them.

The Turkish Society of ORL and HNS has been conducting studies for the development of specialty training and formation of specific standards. This study was conducted with the permission of the Proficiency Council of the Society and the Education Commission. Further, this study was conducted to shed light on the studies that have been conducted to get the opinions of those who experienced the educational process and for the more effective continuation of the process.

Methods

Via the personnel responsible for training in the clinics of 46 state universities (SUs), six foundation universities (FUs), and 25 Ministry of Health Training and Research Hospitals (MHTRH), the e-mail addresses of "Specialist Training Students" (STSs) receiving education were obtained. Without directly contacting STSs, an electronically prepared questionnaire (Appendix 1) was sent via a Google Drive application (Google Inc., CA, USA) to a total of 354 STSs. The confidentiality of the participating units and individuals was ensured, and any possibility of interference with the responses was eliminated using a blind study

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method, in which printed forms were not used. Therefore, optimal conditions for objective evaluation were provided.

Under the subheadings of demographic information, working conditions, education of the respondents, and general assessment, a questionnaire was developed with a total of 36 multiple-choice and closed-ended questions. SPSS version 22.0 (IBM, NY, USA) was used for the analysis of the obtained data. After the homogeneity of the group was checked, a two-tailed t-test, variance analysis, and Bonferroni tests were applied. A value of $p<0.05$ was accepted as the limiting value.

Seventy-four (20.9%) responses were received from the 354 STSs to whom the survey was sent. Survey responses were analyzed after being classified by respondent characteristics, working conditions, training process, and personal opinions.

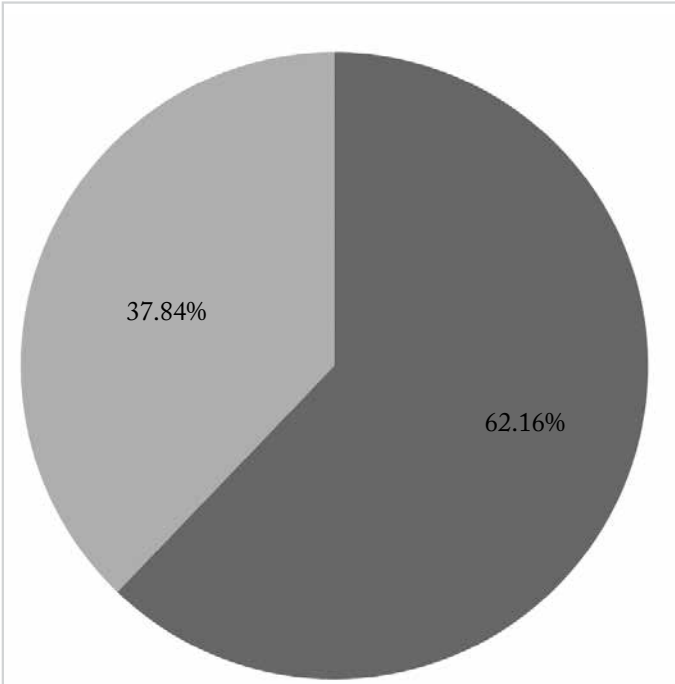
Results

A total of 74 STSs responded to the questionnaire (response rate: 20.90%). Data analysis obtained under the four subheadings is discussed and commented on under the relevant headings.

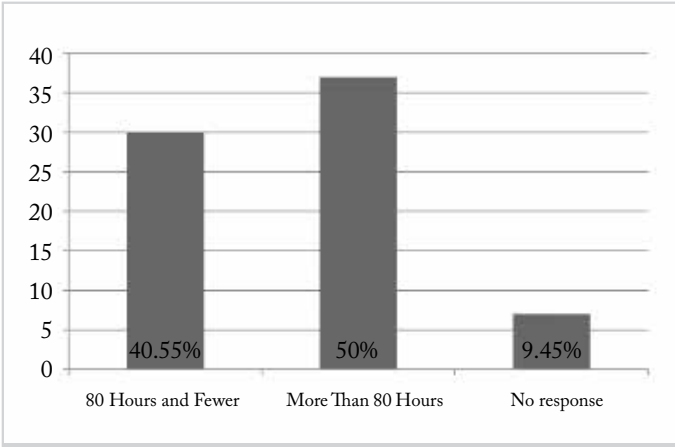
Personal characteristics

Of the respondents, 55 (74.32%) were males and 19 (25.68%) were females; the age range was 24-37 years (average age: 28.1 years). Further, 26 (35.1%) respondents worked in MHTRHs, 40 (54.1%) in SUs, and 8 (10.8%) in FUs. Of STSs who responded, 12 (16.22%) were in the first academic year, 14 (18.92%) in the second year, 20 (27.03%) in the third year, and 22 (29.73%) in the fourth/fifth year. Six of them (8.1%) were attending the specialist training for various reasons although they had finished the four years of legal training.

The clinic they were working in was one of the first five choices of 46 respondents (62.16%) (Graph 1). No correlation was found between the ranking of preferences of STSs and the clinics (MHTRH, SU, or FU) they worked in ($p>0.05$).



Graph 1. Those working in one of the first five preferences



Graph 2. Weekly working hours

Working conditions

All STSs who responded were working for more than 45 h per week. It was found that the number of STSs who stated that their average weekly working time was more than 80 h was 37 (50%) and that 30 (40.55%) of them had an average working time less than 80 h (Graph 2).

The number of patients they examined daily in their polyclinics ranged from 5 to 250, and the average number was 85. When asked for the number of active and passive duties (including standby duties), it was seen that the average number of duties of STSs was 8.4 (minimum 3, maximum 30) in a month.

As a result of the evaluation of responses to questions concerning the number of educators in the unit where STSs work, it was determined that this was below the ideal number in the clinics of 13 STSs (17.57%) (the ideal ratio was two STSs to one educator), and there were educators at the ideal ratio or above in the clinics of 61 STSs (82.43%) (Graph 3). When an assessment was made according to the department in which they worked, all STSs of FUs worked with an ideal number of educators. In SUs, 7.5% of STSs and 38.46% of STSs in MHTRHs reported that the number of educators was below the ideal ratio. This difference was not found to be statistically significant ($p>0.05$). No correlation was demonstrated between satisfaction with the training that STSs received and the number of educators ($p>0.05$).

Education

The answers that STSs gave to the questions related to the application of "Core Training Program (CTP)" and "Assistant Evaluation (AE)" in the clinics where they work are shown in Tables 1 and 2. It is seen from the evaluation made according to the

workplace that the application of CTP in MHTRH clinics was statistically less than in SUs (p=0.03) and FUs (p=0.04). There was no difference among the institutions in the responses given to the question related to the implementation of AE (p>0.05). From the results of the question that assessed the reading of scientific articles, it was found that 9 STSs (12.16%) did not read scientific articles at all and 43 of them (58.1%) read fewer than 3 scientific articles (mean 3.9; minimum 0, maximum 20) in a month.

STSs (52 STSs, 70.27%) mostly evaluated the complex cases they encountered during outpatient practice by consulting the instructors in their clinics. While 42 (56.75%) STSs consulted the senior assistant in addition to those responsible for education in the clinic, 9 (12.16%) of them only consulted senior assistants. The distribution of people whom STSs consulted did not differ among the groups (p>0.05).

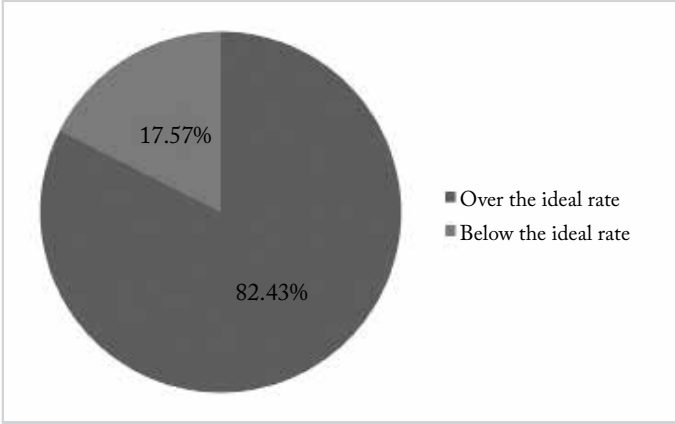
STSs stated that an average of 128.75 (minimum 18, maximum 350) operations were performed per month in the clinics they worked in. While 71.62% of STSs stated that operations were performed by themselves under the supervision of those responsible for training, 8 (10.81%) of them said that they only worked together with senior assistants. The distribution of the officials who accompanied STSs, according to their clinics, during surgical procedures is shown in Table 3. All STSs who worked in FUs stated that they were under the supervision of the personnel responsible for education during operations and no significant difference was found among FUs, SUs, and MHTRHs in terms of the responsible personnel who supervised STSs during operations (p>0.05). It was found that 28 (37.83%) of the respondents had participated in at least one cadaver dissection course. Of STSs (60.46%) who were in the third year of training or above, 26 reported that they had not participated in any dissection course.

It was found that the average number of participations in a congress was 2.05 (minimum 0, maximum 10) STSs who responded to our study; however, 6 STSs in the third year of training or above had not participated in any congress. STSs' opinions about the educational contribution of participation in a congress are shown in Table 4.

The participation of STSs in scientific research carried out in their clinics was found to be lower in MHTRHs than in FUs and SUs (Table 5) (p=0.037).

Personal Opinions

Forty (54.05%) STSs thought that they had received a good and adequate education and 34 (45.95%) of them thought that their education was insufficient (Graph 4). In the evaluation of the frequency of reporting positive and negative opinions of STSs about educational processes, similar rates were found in both sexes (p>0.05). Seventeen (50%) STSs who had the opinion that they did not receive adequate training felt that the training period should have been longer. The respondents' reporting that they received a good and adequate education and the frequency of positive and negative opinions about the educational process did not show a statistically significant relationship with the number of operations performed in the clinics and the average number of operations in other clinics (p>0.05).



Graph 3. The number of trainers in the Clinic

Table 1. Is "Core Training Program" implemented in your clinic?

Core Training Program	Yes	No	No response	Total
MHTRH	9	16	1	26
SU	25	13	2	40
FU	6	2	0	8

MHTRH: Ministry of Health Training and Research Hospital, SU: state university, FU: foundation university

Table 2. Is "Assistant Evaluation" used in your clinic?

Assistant Evaluation	Yes	No	No response	Total
MHTRH	10	14	2	26
SU	31	8	1	40
FU	8	0	0	8

MHTRH: Ministry of Health Training and Research Hospital, SU: state university, FU: foundation university

Table 3. Who is situated as an observer and an assister during surgical procedures performed by an assistant in your clinic?

Supervision in Surgery	MHTRH	SU	FU
Senior STS	19	28	1
Specialist	20	15	4
Lecturer	13	32	8
None	0	0	0

STS: Specialist Training Student, MHTRH: Ministry of Health Training and Research Hospital, SU: state university, FU: foundation university

Table 4. How do you assess the contribution of the congresses you attended to your training?

It was very useful	5
It was useful	35
It was not useful	3
Neutral	10
I haven't participated	21

Table 5. Have you attended scientific–academic work conducted in your clinic?

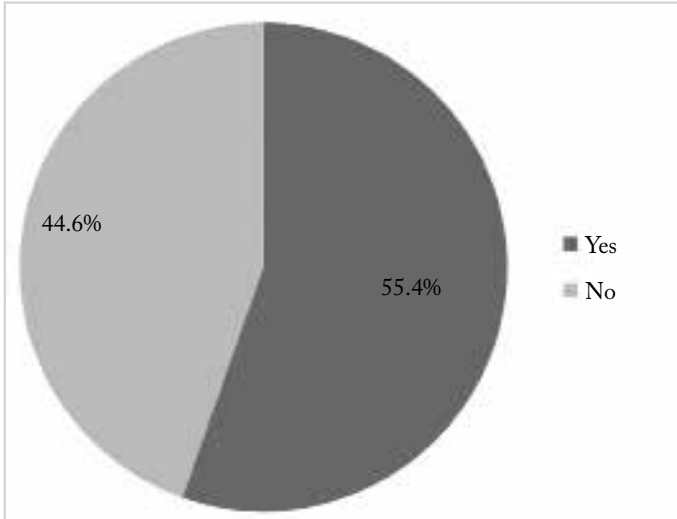
Participation in academic studies	Yes	No	No response	Total
MHTRH	14	11	1	26
SU	29	9	2	40
FU	8	0	0	8

MHTRH: Ministry of Health Training and Research Hospital, SU: state university, FU: foundation university

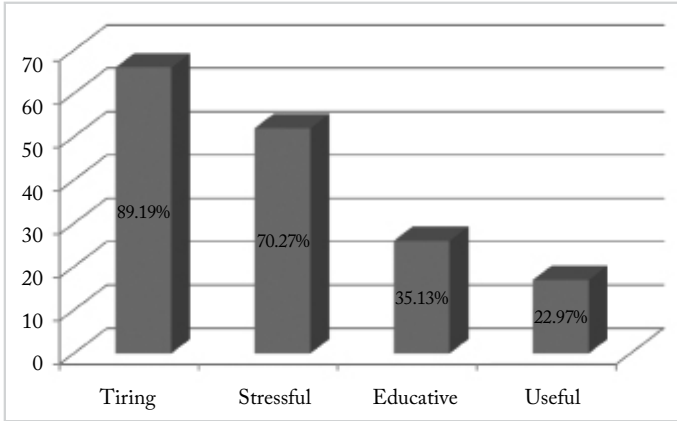
Of the respondents, 29 (39.18%) stated that they worked in a clinic for education, 17 (22.97%) for research, and 46 (62.16%) for adequate service. While 15 (20.27%) STSs did not find their clinics adequate in terms of these three parameters, 28 (37.83%) of them found the clinics adequate only for service. When the assessment was made according to their educational institutions, no difference was found between institutions between those who thought that their institutions were adequate in service provision and those who thought that their institutions were inadequate in one of the parameters of education, research, or service. The employees of SUs (p=0.012) and FUs (p=0.01) found that their institutions were adequate at a statistically significantly higher rate in terms of education and research when compared with MHTRH employees.

When STSs were asked to evaluate the educational process, although 66 (89.18%) of them assessed the process as "tiring" and 52 (70.27%) as "stressful," it was observed that those who evaluated it as "educative" or "useful" were respectively 26 (35.13%) and 17 (22.97%) (Graph 5). No significant difference was found in terms of gender, institutions, or working conditions in these assessments (p>0.05).

It was observed that 43 (89.58%) out of 48 STSs who were in the third year of training or above responded that they could not perform surgery in one or more procedures listed in the survey. From this point of view, no significant difference was observed between groups with a number of operations below or above the average. When STSs who said "Yes" to this question were asked why, the vast majority gave the answer of "technical and educational deficiencies" (34 STSs, 79.06%). The other responses that were obtained are shown below (Table 6).



Graph 4. Do you think you received a good and adequate education?



Graph 5. Opinions on the Process of Specialist Training

Table 6. What makes you think you cannot perform any operations specified after education?

Lack of equipment	14
Technical and educational lack	34
Postoperative care difficulty	18
Lack of the patient potential	5
Not performed in your clinic	7

Discussion

In our study, 74.32% of the ENT STS respondents were found to be men and 25.68% women. As is the case all over the world, women's interest in medical education has been increasing in recent years in Turkey as well (8). However, in a study conducted among students at a medical school in the United States (US), even though the male/female ratio of students was found to be 1:1, although there was no clear negative discrimination against women in surgical disciplines, it was stated that women did not consider them as favorably as men did (8). The proportion of women was reported to be 35% among ENT specialists in a study in Brazil (5). The fact that the proportion of women among STSs who responded in our study was determined to be 25.68% indicates the existence of a similar timid disposition in Turkey.

A person in the position of an apprentice follows his/her master, using his/her skills, and learns while helping (2, 3, 6, 7). In our

study, 70.27% of STSs mostly evaluated the complex cases they encountered during outpatient practice by consulting the people responsible for education in their clinics. Moreover, 71.62% of STSs reported that they were under the supervision of those responsible for training during the operations performed by them. These results are an indication that the traditional "master–apprentice" model is still continuing. This method is still considered to be good in surgical medicine departments, where the necessary dexterity should be used for the application of many alternative methods effectively and safely.

Surgical departments are always known to have hard working conditions. In a study conducted by Goldin et al. (9), in an assessment of the quality of life of students in the faculty of medicine during surgical internship, it was demonstrated that the duration of sleep of the students decreased and they became more depressed. Further, in our study on the specialty training process, the education was evaluated as "tiring" by 89.18% of STSs and "stressful" by 70.27%, and this result supports the study by Goldin et al. The general idea of ENT specialty training, which requires surgical and medical treatment to be applied together, is that it is quite a hard and strenuous process that demands sacrifices for both educators and students. The high rate of response to our study in terms of a definition of tiring and stressful supports/reinforces this view.

At the end of an arduous training process, which was defined as tiring and stressful by majority of the respondents, almost half of STSs (44.6%) thought that the training was not enough. Only 55.4% of STSs had the opinion that they received a good and adequate training. In Turkey, healthcare and education in this area were organized by the "Law on the Practice of Medicine and Medical Sciences" issued in 1928 and the "Higher Education Law" issued in 1981 (10, 11). After the ENT specialist training process given in accordance with the relevant regulations, the student is accepted as a "specialist" in the field and is legally expected to perform all procedures in terms of techniques without mistakes (12-14). At the end of the standard training period, this requirement for "specialty" is still expected, although there are no objective criteria that can be used to measure the skills acquired by students and the learning rates of persons differ. This situation is now being questioned in Turkey. Our study is the first to communicate the opinions of STSs to the organizations that aim to improve the quality of education and will be an important resource in this regard.

All respondents had been working for more than 45 h weekly, which was designated by Labor Law no. 4857 in Turkey (15). While 59.45% stated that they worked for over the 80-h period determined by the institution (Accreditation Council for Graduate Medical Education, ACGME) that organized the specialized training in the US, the proportion of those who correspondingly worked for a more limited duration was 40.55%. The weekly working time of STSs was limited to 80 h by the ACGME in July 2003 (16). There is also a similar restriction in Brazil, where the weekly working time for STSs is limited to 60 h including patient care, surgical procedures, and theoretical lessons (5). Following the implementation of the ACGME restriction, concern that the education that was received would not be enough emerged in both teachers and students (3, 6). The reason for this can be that concern about being confronted with high levels of compensation encountered in malpractice lawsuits and the increase in the cost of professional liability insurance dominated the workload that the existing educational process entailed. In our study, no correlation was found between personal opinions about the quality/adequacy of education and educational processes and the 80-h limitation of weekly working time. However, in studies conducted with non-medical staff such as commercial airline pilots and long-haul drivers who must maintain continuous attention, fatigue was shown to adversely affect decision-making abilities and motor skills (17). Therefore, it should be considered that overextended durations of daily education/working decrease the quality of both the services provided and education received and increase the likelihood that the employees make mistakes.

Although few in number studies have been conducted to determine the standards of specialty training and improve its quality in Turkey. For this purpose, in a study that was performed at a time when specialty training in family medicine was implemented for three years in Turkey, majority of STSs stated that more rotations were needed in addition to training (18). It was also observed in our study that half of STSs (51.51%) who thought that they had not received adequate training had the opinion that the training period should be longer. Restrictions on working time reduce the experience gained in the operating room in surgical branches and indirectly lead to a prolongation of the total training time (3). Increasing the quality of education without prolonging its duration is only possible via the effective use of training time. The Turkish ORL-HNS has been conducting studies in terms of the application of CTP and AE with the same objective. However, the present study shows that these implementations were still not clearly reflected in daily practice. The standardization of training will be provided via the application of CTP, and we will have documents for the control of training received and the procedures performed by STSs via AEs; these will guide studies to develop educational processes in the following years. In this study, it was observed that 12.16% of STSs never read scientific papers, 58.1% of them read fewer than three articles (mean 3.9; minimum 0, maximum 20) a month, and only 37.83% of them had participated in at least one cadaver dissection course. The "see one–do one" approach cannot be applied in surgical fields. Success in procedures is achieved by a combination of theoretical knowledge, the ability to make quick decisions, and manual dexterity (14). STSs are expected to read written sources and increase their knowledge and experience via educational meetings, participation in congresses, and cadaver courses (2, 6). Keeping information up to date and maintaining practices at a contemporary level are only possible by reading scientific publications and participating in activities

and applications/courses. Although support for participation in congresses provided by the Turkish ORL-HNS and its branch associations is significant for the education of STSs, the fact that some STSs had still not participated in any congress at the end of their education shows that more attention should be given to this issue. However, even if training methods such as training videos, cadaver studies, and simulation laboratories are useful, the management of multifactorial stresses and challenges in studies with real patients is achieved only by working with these patients one-on-one (2, 3). In addition to daily practices, the more effective use of visual materials that will contribute to the training process, arrangements of concentrated training programs on a chosen topic, and ensuring greater participation of STSs in organized congresses will increase their learning motivation without raising their workload.

Conclusion

The evaluation of applications that are in place and therefore, the determination of the present situation could be performed using this survey. Due diligence and institutional/individual development are the starting points of quality studies that can be considered as a complete set of improvement activities. Shortcomings and strengths can be detected in this way, and actions that can be taken can be planned to eliminate the detected deficiencies and consolidate/generalize the strengths. Even though the number of STSs from whom we received responses is lower than we aimed, we believe that obtaining the opinions of ENT STSs for the first time in Turkey and presenting the current situation will be instructive for devising training plans and creating guidance.

Ethics Committee Approval: Ethics committee approval was not received for this study because of being a voluntary questionnaire that can be filled in electronical base anonymously and study does not contain any invasive procedure.

Informed Consent: Written informed consent was not obtained for this study as it is a questionnaire study involving residency education.

Peer-review: Externally peer-reviewed.

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Appendix 1. Survey Text

Satisfaction with Education of Otorhinolaryngology Residents

1) Gender

- o Male
- o Female

2) Age

3) The medical school that you graduated from

4) Which city do you work in?

5) Where do you work?

- o Ministry of Health Training and Research Hospital
- o State University
- o Private or Foundation University

6) Which year in Specialist Training are you in?

- o First year
- o Second year
- o Third year
- o Fourth year
- o Fifth year

7) In which place was the department that you are currently working in among your choices in the examination for specialty in medicine?

8) How many operations are performed per month in your clinic on average?

9) How many Specialist Training Students (assistants) are in your clinic?

10) How many instructors are in your clinic?

11) How many patient beds does your clinic have?

12) Is "Assistant Training Program" or "Core Education Curriculum" applied in your clinic?

- o Yes
- o No

13) Is "Assistant Evaluation" applied in your clinic?

- o Yes
- o No

14) Among the components of education, service, and research, for which one(s) do you find your institution sufficient? More than one answer can be given.

- o Training
- o Research
- o Services
- o None

15) How would you rate your educational process? More than one answer can be given.

- o Tiring
- o Stressful
- o Educative
- o Improving
- o Useful
- o Boring
- o Cushy
- o Other

16) Do you believe that you received good and adequate education?

- o Yes
- o No

17) Where or from whom do you learn the theoretical knowledge you acquire in your field? More than one answer can be given.

- o Senior assistant
- o Classic books
- o Electronic environment
- o Instructors working in your clinic
- o Seminars/Congresses
- o Other

18) What do you think about the duration of the four-year otolaryngology education being implemented in our country now?

- o Sufficient
- o Short
- o Longer than necessary

19) How many medical articles per month (domestic or foreign) do you read on average?

20) Which one(s) of the following is/are performed in your clinic on a regular basis so you can participate in them? More than one answer can be given.

- o Article time
- o Seminars
- o Case reports
- o Mortality–morbidity meetings
- o Training visits
- o All
- o None
- o Other

21) Is "Multidisciplinary Meeting" applied in your organization?

- o Yes
- o No

22) Are legally obligatory external rotations done during specialty training in otolaryngology?

- o Yes
- o No
- o Partially

24) How many times have you participated in otolaryngology congresses so far?

25) How do you assess the contribution of the otolaryngology congresses you attended to your training?

- o It was very useful
- o It was useful
- o Neutral
- o It was not useful
- o It was not useful at all
- o I have not participated in any congress yet

26) How many hours do you work on average? (including time on duty)

27) How many patients per day do you examine in outpatient clinics? (including emergency cases and consultations)

28) How many days per month do you have active or passive duties? (Including the cases when you are supposed to come to the hospital when necessary)

28) With whom do you evaluate the cases to be consulted in the event that you encounter them in outpatient clinics? More than one answer can be given.

- o Senior assistant
- o Specialist
- o Lecturer
- o Consultation in committee
- o None

29) Who is present during surgical procedures performed by the assistants in your clinic as an observer and assister? More than one answer can be given.

- o Senior assistant
- o Specialist
- o Lecturer
- o None

30) Have you participated in a cadaver dissection course as a practitioner?

- o Yes
- o No

31) Which dissection course(s) have you participated in as a practitioner?

More than one answer can be given.

- o Temporal bone dissection
- o Endoscopic sinus surgery
- o Rhinoplasty
- o Head and neck surgery
- o Other

32) Have you taken an active role in the scientific work conducted at your clinic?

- o Yes
- o No

33) What methods do you use in your thesis?

- o I haven't received my thesis yet
- o Retrospective data analysis
- o Prospective data analysis
- o Animal experiment
- o Other

34) Which surgery or surgeries do you think you cannot perform after your specialty training?

More than one answer can be given. *

- o Adenoidectomy
- o Tonsillectomy
- o Myringotomy
- o Tracheostomy
- o Septoplasty
- o Mass excision
- o Myringoplasty–Tympanoplasty
- o Mastoidectomy
- o Laryngectomy
- o Neck dissection
- o Suspension laryngoscopy
- o Endoscopic sinus surgery
- o Rhinoplasty
- o Other

35) If you have ticked at least one option in the above question, what is the reason why you cannot perform it/them?

More than one answer can be given.