Original Article

Factors influencing the choice of otolaryngology (ORL) head and neck surgery as a future specialty for Saudi medical students

Abdullah A. Alamri[1], Khalid A. Alshehri[1], Ahmed A. Alharbi[1], Abdulmajeed F. Alahmari[1], Talal A. Alkhatib[1], Mazin A. Merdad[1], Hani Z. Marzoukib[1]

[1]Department of Otolaryngology Head and Neck Surgery, King Abdulaziz University Hospital, Jeddah, Saudi Arabia

Abstract

Aim: To find out the factors and causes that motivate medical students to choose ear, nose, and throat (ORL head and neck surgery) as a specialty in Saudi Arabian medical universities. **Materials and Methods:** A cross-sectional study was conducted at Kingdom of Saudi Arabia by distributing a self-administered questionnaire to 1,516 medical students across all medical universities. Chi-squared test and logistic regression analyses were used to examine the association between the participants' choices and factors motivating their choice of specialty. **Results:** ORL head and neck surgery was chosen as a future specialty by 27% of the participants. Of these, 52% chose lifestyle as the most influential factor determining their choice of specialty. Further analysis of participant preferences revealed that 87.6% listed flexibility within medicine as their main reason for choosing a specialty, followed by reasonable hours of practice in 86%, while 15.9% considered a strong mentor relationship to be important. Students from King Abdulaziz University more frequently chose ORL head and neck, along with those from the eastern kingdom compared with other areas. Student preference for ORL head and neck did not vary significantly with gender, age, or duration of clinical rounds. **Conclusion:** Approximately 27% of students chose ORL head and neck, with lifestyle being the most influential factor, followed by flexibility within medicine. Among students who chose ORL head and neck, the highest percentage was from King Abdulaziz University.

Keywords: Medical students, motivational factors, ORL head and neck, preference

Introduction

During their medical degree, undergraduate students are confronted with a wide range of medical specialties. Several factors are taken into account when making this decision to ensure a realistic understanding of the demands involved in each specialty, including personality considerations, lifestyle, working hours, and income.[1-6]

These days, the decision-making process involved in the choice of a specialty is changing worldwide, with students placing greater importance on lifestyle choices such as flexibility in work hours that allow them to spend more time with family and friends, compared with previous generations.[7]

In a multicentric study, which included 187 final-year medical students in Najran, Saudi Arabia, most students elected obstetrics and gynecology as their first choice purely out of

Address for correspondence: Dr. Hani Z. Marzoukib, Associate Professor and Consultant, Head and Neck Oncology-Microvascular Reconstruction, Chairman of the Department of Otolaryngology-Head and Neck Surgery, King Abdulaziz University and University of Jeddah, Jeddah, Saudi Arabia.
E-mail: hanimarzouki@gmail.com

Received: 22-05-2019 **Revised:** 26-05-2019 **Accepted:** 03-06-2019

Access this article online

Quick Response Code:

Website: www.jfmpc.com

DOI: 10.4103/jfmpc.jfmpc_414_19

How to cite this article: Alamri AA, Alshehri KA, Alharbi AA, Alahmari AF, Alkhatib TA, Merdad MA, *et al*. Factors influencing the choice of otolaryngology (ORL) head and neck surgery as a future specialty for Saudi medical students. J Family Med Prim Care 2019;8:1941-6.

personal interest. Notably, none chose ORL head and neck, most likely because the very short rotation period and consequent reduced exposure time to the specialty is unlikely to foster a personal preference for it.[8] It is thought that excellent teaching, exposure to a multitude of cases, and sufficient time spent with an ORL head and neck mentor either in or out of the operating room, is more likely to encourage its choice as a future career.[9]

As selecting a new specialty is under continuous change and influenced by a multitude of factors. Therefore, it is important to understand the motivations that drive students as individuals. In this study, we aimed to investigate the causes and factors influencing the choice of ORL head and neck as a future specialty among Saudi medical students.

Methods

This cross-sectional study was conducted at Kingdom of Saudi Arabia, Middle Eastern country in Asia continent from May to June 2018 and included male and female medical students in their second to sixth years and internship year (i.e. after completion of their freshman year). An electronic questionnaire was distributed to all medical students from different universities in Saudi Arabia, with a total of 1,516 respondents.

The electronic questionnaire was self-administered and comprised of three parts. The first part included demographic and university information, such as gender, age, university name, and academic year. The second part included questions regarding the ENT rotation, including duration and year of the rotation, whether the rotation included an objective structured clinical examination (OSCE), and the physician whom the student spent the majority of their rotation time in the operating room and outpatient clinic. The third part of the questionnaire was reserved for students who considered ORL head and neck as one of their future specialty choices and included questions regarding the factors that influenced this decision. This part of the questionnaire was adapted from a study by Scott and colleagues (2009).[10]

All identifying variables of participants were removed and only anonymous data were used to ensure privacy and confidentiality. Data access was available only to the principal investigators. The necessary approvals were obtained from the Institutional Review Board (IRB) of King Abdulaziz University (document number: 231-18, January 2019).

The collected data were coded, tabulated, and statistically analyzed into statistical package for social sciences (SPSS) version 23 for data analysis. Descriptive statistics were gathered for quantitative data, including minimum and maximum of the range as well as mean and standard deviation (SD) for quantitative normally distributed data. Qualitative data were analyzed using total numbers and reported as percentages. Inferential analysis was done for quantitative variables using an independent *t*-test. For qualitative data comparisons, the Chi-squared test was used. Logistic regression analysis was employed to determine the independent factors affecting ENT preference.

Results

Our cross-sectional study had a total of 1,516 medical student participants. The age of participants ranges between 19.0 and 32.0 with a mean ± SD of 22.8 ± 1.8 [Table 1]. The geographic distribution of universities within the kingdom was as follows: percentage of universities located in western area 45.9%, eastern area 30.9%, central area 19.1%, southern area 2%, and northern area 1.4% [Table 1]. More than half of respondents (51.6%) had completed their ORL head and neck round, with the duration of the round ranging from 1 to 18 weeks with a mean ± SD of 3.3 (2.4) weeks. Approximately 59% of students had an OSCE for the round. Nearly 60% of the participants declared that they had not attended surgical operations with the remaining 40% attending mainly tonsillectomies. Physicians accompanying students during the ORL head and neck round in the operating room were primarily consultants (74.7%), followed by residents (13.8%), then specialists. Of those students that attended the round, 87% also attended the outpatient clinic (OPC) with the accompanying physicians following the same trend as that for the operating room.

Of those participants surveyed, 27% preferentially chose ORL head and neck as their future specialty. Participants that did not choose ORL head and neck listed an undesirable surgical lifestyle (72%) and the lack of interest in it (19%) as the main reasons for their choice [Table 2]. Half of these participants, however, did choose other surgical specialties. We then studied the factors influencing the student's choice of ORL head and neck as a future specialty. These were primarily flexibile within medicine (87%), and reasonable hours of work [86%; Table 3]. Lifestyle was the main motivating factor (52.4%) for students in pursuing ORL head and neck [Figure 1 and Table 4]. The Saudi Medical Licensing Examination (SMLE) score appears to be the most important factor for ORL head and neck residency training

Table 1: Demographic distribution of the students

Gender	*n*	Percentage
Male	727	48.0
Female	789	52.0
University		
King Faisal	294	19.4
King Abdulaziz	275	18.1
Imam abdalrahman	175	11.5
King Saud HS	165	10.9
Umm Al-Qura	141	9.3
Alfarabi colleges	113	7.5
Taif	93	6.1
Prince Sattam	92	6.1
Ibn Sina	64	4.2
Other Saudi	94	6.2
Other Non-Saudi	10	0.7

Table 2: ORL head and neck specialty non-preference main cause among students not-preferring ORL head and neck specialty

Main cause	*n*	Percentage
Bad surgical life style	796	72.0
Not interesting	212	19.2
Prefer other medical specialty	44	4.0
No information	20	1.8
Require high grades	19	1.7
Prefer other surgical	8	0.7
Difficult surgery	5	0.5
Bad teaching	2	0.2
Total	1106	100%

Table 3: ORL head and neck specialty preference causes among students preferring ORL head and neck specialty

Cause	*n*	Percentage
Flexibility inside of medicine	359	87.6
Acceptable hours of practice	353	86.1
Stable/secure future	342	83.4
Able to spend appropriate time with my family	339	82.7
Good match to career	339	82.7
Acceptable on-call schedule	334	81.5
Keep options open	334	81.5
High income potential	322	78.5
Health promotion is important	318	77.6
Intervention results immediate	307	74.9
Experiences in health fields during medical school	306	74.6
Flexibility outside of medicine	301	73.4
Meaningful past experience	297	72.4
Focus on patients in community	293	71.5
Focus on in-hospital care	292	71.2
Patient population is interesting	290	70.7
Research interest	285	69.5
Experiences with role models during medical school	285	69.5
Prefer medical to social problems	279	68
Emulate physician	275	67.1
Social commitment	264	64.4
Status among colleagues	256	62.4
Wide variety of patient problems	255	62.2
Don't like uncertainty	238	58.0
Focus on non-urgent care	232	56.6
Short postgraduate training	216	52.7
Focus on urgent care	208	50.7
Narrower variety of patient problems	207	50.5
Less intense residency program	198	48.3
Long-term patient relationship	184	44.9
Total	410	100%

program positions. Additionally, a good mentor relationship was an important concern for 30% of students choosing ORL head and neck as a specialty in ranking ORL head and neck residency training positions. The Chi-square test showed no statistically significant difference between choosing ORL head and neck and the gender or age of the participant. Intern-level students and those in grades 4–6 were the least and greatest proportion of students, respectively, among those that chose the specialty.

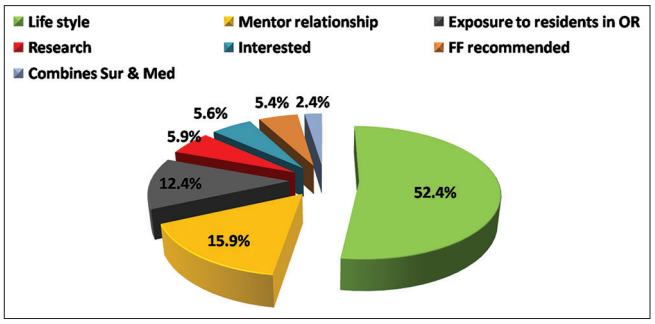

Figure 1: ORL head and neck specialty preference main causes among students preferring specialty

With regards to universities surveyed within the kingdom, students from King Abdulaziz University were significantly more likely to choose ORL head and neck compared with students in other universities, as tested using the Chi-square test ($P = 0.001$, two-tailed, 95% confidence interval). Approximately, 49.5% of students in the ORL head and neck preference group were from the eastern area with western and central area students constituting the smallest proportion in this group. Among those students that attended the ORL head and neck round, we found no statistically significant differences between the ORL head and neck preference and non-preference groups with regards to duration of the round, student grade, or the student having taken an OSCE exam or not. There was statistical significance between those students that chose ORL head and neck and their greater frequency in attending surgical operations (Chi-square test, $P = 0.028$). Residents as the accompanying physician were the most frequent in the ORL head and neck preference group, while specialists and consultants as the accompanying physician were the most frequent in the ORL head and neck non-preference group [Chi-square test, $P = 0.02$, Table 5]. Logistic regression analysis was performed to identify factors affecting ORL head and neck preference, revealing a correlation between attending surgery ($P = 0.028$), and having an accompanying resident in the OPC with preference ($P = 0.028$). A correlation was also found between those not choosing ORL head and neck and being interns in the western and central areas as well as attending King Faisal, Imam Abdulrahman Bin Faisal, or Prince Sattam Bin Abdulaziz universities.

Discussion

Choosing a future medical specialty is a difficult decision for medical students and interns, with several factors influencing their choices. In this study, we surveyed 1,516 medical students and noted that 27% of participants preferred ORL head and neck compared with other surgical and medical specialties. The main factors influencing this decision were lifestyle, flexibility within medicine, reasonable hours of practice, and the promise of a future SMLE exam score.

Alshahrani and colleagues (2014) studied the factors affecting the choice of future specialty among Saudi medical students and found that interns ranked ORL head and neck in the 20th

Table 4: ORL head and neck specialty preference main causes among students preferring ORL head and neck specialty

Cause	*n*	Percentage
Life style	215	52.4
Mentor relationship	65	15.9
Exposure to residents in OR	51	12.4
Research	24	5.9
Interested	23	5.6
FF recommended	22	5.4
Combines Sur & Med	10	2.4
Total	410	100%

Life style was the main cause among students preferring ORL head and neck specialty

Table 5: Comparison according to ORL head and neck specialty preference regarding accompanying physician in Outpatient clinic among ORL head and neck round attended students

Grade	Preferred (*n*=198)	Not-preferred (*n*=485)	*P**
Resident	64 (32.3%)	108 (22.3%)	0.021
Specialist	33 (16.7%)	100 (20.6%)	
Consultant	101 (51.0%)	277 (57.1%)	

*Chi-square test

position compared with all medical and surgical specialties. In the University of Dammam, 44.7% of medical students reinforced lifestyle as being the most influential factor when choosing a specialty for their future medical career.[11] This goes with our results which demonstrated that 52.4% of our students marked lifestyle as a top cause to choose ORL head and neck. Similarly, a study of French medical students reported lifestyle to be the main reason in choosing and avoiding certain medical specialties. Newton and colleagues (2005) surveyed 1,327 graduates from two different medical schools in the United States (New York Medical College. A member of the Touro college and University system and private biomedical health sciences university and the Brody School of Medicine at East Carolina University) found that lifestyle and income were the two factors that influenced their career choice,[12] a conclusion that was similarly noted among Canadian students.[13] We have noticed that 78.5% among students preferring ORL head and neck surgery specialty put high income among the priority causes to choose such specialty. Financial incentives can influence students' career choice which is consistent with other findings from other studies.[10] Another study based in Nigeria reported that medical students chose their core clinical specialty based primarily on their personal interest in the specialty, financial reward, and societal perception. The same study also noted a shortage of ORL head and neck surgical specialists.[8] A United States-based study that investigated the determinants of an ORL head and neck career choice reported similar results to those in our study.[9]

Students that did not choose ORL head and neck as their future specialty cited an undesirable surgical lifestyle or a lack of interest in the specialty as their primary reasons. The preference for the specialty was not correlated with gender or age. Intern-level students were significantly less likely to choose it than other grades. Logistic regression was done to assess factors influencing the choice and intern was statistically significant different from medical students ($P = 0.008$). Some researchers found that medical interns considered lifestyle as an important factor compared with medical students and it was found statistically significant ($P = 0.020$).[11] It is well known that choosing of a career specialty by medical students can be a complex and confusing issue,[14] and that the insight and educational level increased in the final years and internship. The duration of ORL head and neck rotation in our study ranged from 1 to 18 weeks. It was evident that a longer duration enabled students to have the time to attend outpatient clinics or participate in the operating room. In the Nigerian survey mentioned previously, the rotation duration of specialties like ORL head and neck, which were not frequently chosen by students as a future career, was very short. In some cases, the posting was less than 4 weeks, thereby limiting student exposure to and learning within these specialties. Consequently, students were less likely to develop a personal preference for or even an interest in the specialty. Interestingly, this was not a significant factor influencing its preference in our study. Previous studies have found financial reward to be an important factor considered by medical students when deliberating on the choice of clinical career.[15]

Attending surgical procedures was found to be an influential factor that helped students develop a personal preference for a surgical specialty, with 40% of the students in our study having attended surgical procedures. Attendance at OPCs (87%) allowed students to gain more exposure, knowledge, and personal contact with ORL head and neck physicians. Accompanying physicians had a significant influence over the student's choice to pursue a career in certain medical specialties, with consultants being the most common type of accompanying physician. Previous studies have discussed the importance of inspirational role models or mentoring, and their impact on the student's decision of a medical career choice. Residents were cited as one of the most effective mentors with Burack *et al.* (1997) describing this as a socially constructed process of trying on possible selves.[16,17] This finding is consistent with our own results which revealed significant correlations between residents being the more frequent accompanying physician among those students that chose ORL head and neck, and specialists and consultants being more frequent among those that did not.

The mentor relationship appeared to be a main factor in influencing the ranking for ORL head and neck residency training positions, this was evident in 30% of our students among the preferring group, when they were questioned about factors influencing ranking for ORL training. Residents were more frequent among ORL head and neck preferred group, while specialist and consultants were more frequent among ORL head and neck non-preferred group, the differences were statistically significant ($P = 0.021$).

Our results are concurrent with those of Abdulghani and colleagues (2013) from King Saud University in Saudi Arabia,

which demonstrate that the probability of proper choice increased in grade 4 to grade 6 rather than grade 1 or 2.[18] This is most likely due to greater exposure, more knowledge, and proper insight.

There were also correlations between preference and the geographic university location with western and central area students being significantly less predominant in the preference group, and eastern area students representing the majority. On the other hand, more local study conducted in King Abdulaziz University (KAU) which is located the western area, showed that 42% of the KAU students were interested in ORL.[19] This observation highlights the need to better understand the underlying causes in the universities or geographic areas that may promote or dissuade student interests in certain medical careers. It is important to note that our sample of students was chosen randomly.

Skewed nation-wide distributions of clinicians in different specialties can detrimentally affect national health services. Therefore, it is crucial to investigate and understand the various factors involved in a medical student's decision to pursue a medical career and start a future specialty.

Limitation of our study: one of the limitations in our study is that we included undergraduates from second year to medical interns with totally different degree of exposure to ORL head and neck surgery, variant sharing in outpatient clinics, operating rooms, medical education in that field, which yield unequal perspectives, insight, and judgment for proper choice of a life time carrier. However, we could not separate them, which could give some sort of selection bias and because our study involves many medical universities and the ORL head and neck rotation time is different across different universities.

Conclusion

This study demonstrated that over one-quarter of the total student respondents preferred ORL head and neck as a future specialty. Undesirable surgical lifestyle was the most common reason for not choosing ORL head and neck, while lifestyle, flexibility within medicine, and reasonable hours of practice were the most common factors for choosing it. Based on our findings, we recommend promoting the attractive aspects of the specialty to persuade more students to join and argue for greater exposure to ORL head and neck during undergraduate and postgraduate training by increasing the time allotted to this surgical specialty.

Acknowledgements

These names to be acknowledged for contributing in data collection: they are all medical students. Wejdan J. Alharbi, Bashair W. Melibari, Ayman M. Aljehani, Fatimah S. Alkhalifah, Anwar S. Alkhalifah, Faisal F. Aljuaid, Haya S. Alshaibani, Maali O. Alrashed, Loujain I. Alotaibi, Mohammed S. Almutairi, Abdullah S. Althobaiti, Munirah A. Almakhayitah, Abdullah M. Alnefaie, Khalid S. Almuhawwis.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Dorsey ER, Jarjoura D, Rutecki GW. Influence of controllable lifestyle on recent trends in specialty choice by US medical students. JAMA 2003;290:1173-8.
2. Rosenthal MP, Diamond JJ, Rabinowitz HK, Bauer LC, Jones RL, Kearl GW, *et al.* Influence of income, hours worked, and loan repayment on medical students' decision to pursue a primary care career. JAMA 1994;271:914-7.
3. Baker LC, Barker DC. Factors associated with the perception that debt influences physicians' specialty choices. Acad Med 1997;72:1088-96.
4. Mutha S, Takayama JI, O'Neil EH. Insights into medical students' career choices based on third-and fourth-year students' focus-group discussions. Acad Med 1997;72:635-40.
5. Wright S, Wong A, Newill C. The impact of role models on medical students. J Gen Intern Med 1997;12:53-6.
6. Erzurum VZ, Obermeyer RJ, Fecher A, Thyagarajan P, Tan P, Koler AK, *et al.* What influences medical students' choice of surgical careers. Surgery 2000;128:253-6.
7. Collier E. Workplace warfare: Baby boomers, gen X and gen Y. Retrieved from 2016.
8. Akpayak IC, Okonta KE, Ekpe EE. Medical students' preference for choice of clinical specialties: A multicentre survey in Nigeria. Jos J Med 2014;8:49-52.
9. McCaffrey JC. Medical student selection of otolaryngology-head and neck surgery as a specialty: Influences and attitudes. Otolaryngol Head Neck Surg 2005;133:825-30.
10. Ebell MH. Future salary and US residency fill rate revisited. JAMA 2008;300:1131-2.
11. Alshahrani M, Dhafery B, Al Mulhim M, Alkhadra F, Al Bagshi D, Bukhamsin N. Factors influencing Saudi medical students and interns' choice of future specialty: A self-administered questionnaire. Adv Med Educ Pract 2014;5:397-402.
12. Newton DA, Grayson MS, Thompson LF. The variable influence of lifestyle and income on medical students' career specialty choices: Data from two US medical schools, 1998-2004. Acad Med 2005;80:809-14.
13. Wright B, Scott I, Woloschuk W, Brenneis F. Career choice of new medical students at three Canadian universities: Family medicine versus specialty medicine. CMAJ 2004;170:1920-4.
14. Asani MO, Gwarzo GD, Gambo MJ. Preference of specialty choices among final year medical students of Bayero University Kano. Sahel Med J 2016;19:155-8.
15. Yang MJ, Tsai JH. Specialty choices of students at a college of medicine and relevant factors. Med Educ 1999;2:15-22.
16. Burack JH, Irby DM, Carline JD, Ambrozy DM, Ellsbury KE, Stritter FT. A study of medical students' specialty-choice pathways: Trying on possible selves. Acad Med 1997;72:534-41.

17. Bhutta M, Mandavia R, Syed I, Qureshi A, Hettige R, Wong BYW. A survey of how and why medical students and junior doctors choose a career in ENT surgery. J Laryngol Otology 2016;130:10548.
18. Abdulghani HM, Al-Shaikhi GH, ALhujayri A, Alohaidebi N, AlSaeed H, ALshohayebi I. What determines the selection of undergraduate medical students to the specialty of their future careers. Med Tech 2013;35:S25-S30.
19. Qorban G, Al-Khatib T, Howldar S, Allinjawi O, Jawa H, Baig M. Factors influencing career choice in otorhinolaryngology among medical students at King Abdulaziz University, Jeddah, Saudi Arabia. Saudi J Otorhinolaryngol Head Neck Surg 2018;20:20-8.