

Received:
1-IV-2021

The Self-Confidence of Dental Students in Oral Surgery

Accepted:
9-VII-2021

La autoconfianza de los estudiantes de odontología en cirugía oral

Published Online:
23-VII-2021

Merve Sari DDS¹; Ugur Derdiyok²

1. Department of Oral and Maxillofacial Surgery, Tokat Oral and Dental Health Center, Tokat, Turkey. <https://orcid.org/0000-0002-4902-7787>

2. Department of Oral and Maxillofacial Surgery, Kirikkale University Faculty of Dentistry, Kirikkale, Turkey. <https://orcid.org/0000-0002-4621-4720>

Correspondence to: Dr. Merve Sari - mervexsari3@gmail.com

ABSTRACT: The aim of this study is to evaluate the self-confidence of undergraduate students and thus to highlight the strengths and weaknesses of oral surgery education from the students' perspectives. A survey was conducted by preparing a questionnaire to assess the self-confidence of students in performing oral surgery. Survey questions have been imported to Google Forms®. It was then electronically delivered to the students through the Turkish Dental Association. Regarding the data, besides the frequency and percentage distributions, the relationship between the variables was analyzed using the Chi-Square test. A total of 615 students, including 386 female and 229 male students, participated in this study. Of the students, 62.4% were 5th year and 37.56% were 4th year students. According to the survey, it was observed that male students and 5th year students were in general more confident in themselves. Students had low self-confidence in differentiating between odontogenic and non-odontogenic pain and recognizing malignant lesions or lesions with high malignant potential. In the oral surgery curriculum, subjects in which the students have issues should be identified and more emphasis should be placed on them. Oral pathology as well as head and neck anatomy courses should be emphasized further, priority should be given to case-based courses, and reminder presentations should be made at certain intervals. In addition, considering that practice is important for gaining self-confidence, students must practice more under the supervision of instructors in the areas in which they feel inadequate.

KEYWORDS: Anatomical knowledge; Dental student; Dental students' opinion; Dental students' self-confidence; Oral surgery.

RESUMEN: El objetivo de este estudio es evaluar la autoconfianza de los estudiantes de pregrado y así resaltar las fortalezas y debilidades de la educación en cirugía oral desde la perspectiva de los estudiantes. Se realizó una encuesta mediante la elaboración de un cuestionario para evaluar la autoconfianza de los estudiantes en la realización de cirugía oral. Las preguntas de la encuesta se importaron a Google Forms®. Luego se les entregó electrónicamente a los estudiantes a través de la Asociación Dental Turca. En cuanto los datos, además de las distribuciones de frecuencia y porcentaje, se analizó también la relación entre las variables mediante la prueba Chi-Cuadrado. Se participaron 386 estudiantes femininas y 229 estudiantes masculinos en este estudio, un total de 615 personas. El 62,4% de los estudiantes eran del 5º año y el 37,56% eran estudiantes del 4º año. Según la encuesta, se observó que los estudiantes masculinos y los estudiantes del 5º año tenían en general más confianza en sí mismos. Los estudiantes tenían poca confianza en sí mismos para diferenciar entre dolor odontogénico y no odontogénico y reconocer lesiones malignas o lesiones malignas con alto potencial. En el plan de estudios de cirugía oral, se deben identificar las materias en las que los estudiantes tienen problemas y se debe poner más énfasis en ellas. Se debe enfatizar aún más los cursos de patología oral, así como de anatomía de cabeza y cuello. Se debe dar prioridad a los cursos basados en casos, y se deben hacer presentaciones recordatorias a ciertos intervalos. Además, considerando que la práctica es importante para aumentar la autoconfianza, los estudiantes deben practicar más bajo la supervisión de instructores en las áreas en las que se sienten inadecuados.

PALABRAS CLAVE: Conocimientos anatómicos; Estudiante dental; Opinión de los estudiantes de odontología; La confianza en sí mismos de los estudiantes de odontología; Cirugía Oral.

INTRODUCTION

Currently, many educational approaches, principles and methods are applied in dentistry education (1,2). The main purpose of dentistry education is to help students develop their clinical practice. Clinical training covers more than three quarters of the dentistry curriculum and is mainly aimed at developing psychomotor skills necessary for prosthetic or surgical procedures of the teeth. Students get to experience a series of defined skills in faculty clinics under the supervision of instructors (2). The clinical environment is essential for training graduates who can exhibit adequate and independent clinical practice (3). Dentistry, like other programs in the faculty of medicine, focuses more on technical skills due

to the scientific structure of the curriculum. In addition, students get to experience invasive procedures that are irreversible during dentistry education (4). The ideal dentistry program should be a program that is always updated and responds to the needs of students (5). Direct observation of the application skills and corrective feedback are among the most important tools to improve clinical skill training (6). The feedback method, which is one of the methods used to evaluate this program, monitors and evaluates the quality of the academic programs. In addition, this method provides information about the effectiveness of clinical training (7).

Self-confidence is gained through training given before the graduation (8) and is a supportive

factor for entering a specialty program after graduation (9). When planning curriculum content for students, the perceptions of students about their clinical environment and experience should always be taken into consideration (10). However, students' perceptions of their education is a less popular area of research (11). There are studies in the literature on the students' perceptions related to dentistry education, self-confidence, and preparation for general dental practice before graduation (5,8,12-15). The aim of this study is to evaluate the self-confidence of undergraduate students and thus to highlight the strengths and weaknesses of oral surgery education from the students' perspectives.

In addition, we established the hypothesis that students who rely on anatomical knowledge will trust themselves in extraction, and for this purpose we aimed to evaluate the relationships between forceps extraction, surgical extraction and anatomical knowledge.

MATERIALS AND METHODS

The present study was designed in a cross-sectional investigation. This study was approved by the Ethics Committee of Tokat Gaziosmanpasa University. (Date: 11.06.2020, Project number: 20-KAEK-137). Individuals who were 4th and 5th year dentistry students and voluntarily agreed to participate in the study were included in this study. The survey and informed consent form we used in the study was delivered online to 4th and 5th year dental students registered with the Turkish Dental Association due to the current pandemic. The first part of the survey was to assess students' self-confidence in performing oral surgery; there were questions about the age, gender, and year of students, satisfaction with the surgical training given to them at the faculty, as well as about the most difficult and easiest branches of dentistry. The second part consisted of 16 questions involving a Likert type scale, which evaluated

self-confidence of the students in performing oral surgery. Questions in the second part of the survey form were created with reference to the study by Cabbar *et al.* (16) on the subject.

Students were informed that participation was voluntary and anonymous. Informed consent form was obtained from all participants. Survey questions were imported to Google Forms®. The survey was then electronically delivered to dental students registered with the Turkish Dental Association. The students were asked to respond to the questions by selecting from the options strongly agree, agree, neither agree or disagree, disagree, strongly disagree. To avoid a conflict of interest, participants were instructed to not name their universities. The main goal was to collect as much data as possible for the benefit of dental education on the subject. Survey responses given between 15.08.2020-15.10.2020 have been accepted.

STATISTICAL ANALYSIS

For all statistical analysis, IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. (Armonk, NY: IBM Corp). Regarding the data, in addition to frequency and percentage distributions, the relationship between categorical variables was analyzed using the Chi-Square test. Pearson's correlations were calculated to assess the statistical relationships between the responses of the questions about surgical suturing, extraction, use of surgical instruments and anatomical knowledge. P-value was accepted significant under 0.05.

RESULTS

A total of 615 students of dentistry, including 386 female (62.8%) and 229 male (37.2%) students participated in the study. Of 615 students, 384 (62.4%) were 5th year and 231 (37.56%) were 4th year students. Among the students, 132 female and 99 male students were 4th year students;

254 female (41.3%) and 130 male (21.13%) students were 5th year students. The mean age of the students participating in the study was 23.07 ± 1.25 years (Table 1). While 21.3% of the students reported oral and maxillofacial surgery as the most difficult branch of dentistry, 2.4% reported it as the easiest branch. Of the students, 65.2% (n=401) stated that they were satisfied with the faculty at which they were being educated.

Table 1. Demographic characteristics of the participants.

		4th-grade	5th-grade	Total
Gender	Male	99 (43.23%)	130 (56.76%)	229
	Female	132 (34.19%)	254 (65.08%)	386
Mean age, years		22.45 ± 1.08	23.45 ± 1.19	23.07 ± 1.25

Only 44.71% of the students (n=275) reported that the training they received on oral surgery was sufficient for practice after graduation. While 97.23% (n=598) were confident in the extraction of single-root teeth, only 41.13% (n=253) were self-confident in surgical extractions. The rate of self-confidence in diagnosing and treating pericoronitis was 56.42% (n=347), in requesting consultation was 73.82% (n=454), in recognizing malignant lesions was 23.9% (n=147), and in differentiating between odontogenic and

non-odontogenic pain was 39.5% (n=243). 43.9% (n=270) expressed self-confidence in their anatomical knowledge of oral surgery (Tables 2 ve 3). In addition, 77.7% of the students (n=478) reported that oral surgery was a satisfying and enjoyable discipline.

5th year students were more confident than 4th year students in diagnosing an indication for extraction, performing dental anesthesia, forceps extraction, surgical extraction, suturing, diagnosing and treating acute pericoronitis, evaluation of embedded third molar teeth, writing an appropriate referral letter. However, there is no statistically significant difference between the two groups in terms of anatomical information (Table 3).

Correlations between surgical suturing, extraction from a specific quadrant or jaw, use of surgical instruments and anatomical knowledge are given in Tables 4 and Table 5. Statistically significant correlations were found between all aspects of self-confidence in surgical skills (extraction, use of surgical instruments and surgical suturing). The associations between anatomy learning in relation to oral surgery (Q13 and Q14) and self-confidence in surgical skills also were statistically significant. Correlations were not observed with Q15, which had questioned the need for a broader knowledge of anatomy beyond the teeth and jaws.

Table 2. The differences between female and male respondents.

	Strongly agree		Agree		Neither agree or disagree		Disagree		Strongly disagree		p
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
Q1. The teaching that I have received in oral surgery has given me sufficient knowledge to undertake independent practise.	Female	26 (6.73)	142 (36.78)	102 (26.42)	89 (23.05)	27 (6.99)					
	Male	20 (8.73)	87 (37.99)	68 (29.69)	40 (17.46)	14 (6.11)					p=0.45
	Total	46 (7.47)	229 (37.23)	170 (27.64)	129 (20.97)	41 (6.66)					
Q2. I feel confident to diagnose extraction indication for any tooth.	Female	83 (21.5)	246 (63.73)	48 (12.43)	7 (1.81)	2 (0.51)					
	Male	72 (31.44)	133 (58.07)	20 (8.73)	4 (1.74)	0 (0)					p=0.044*
	Total	155 (25.2)	379 (61.62)	68 (11)	11 (1.78)	2 (0.32)					
Q3. I feel confident that I could perform dental anesthesia and could choose the appropriate anesthetic for each patient.	Female	62 (16.06)	207 (53.62)	80 (20.72)	34 (8.8)	3 (0.77)					
	Male	54 (23.58)	144 (62.88)	22 (9.6)	9 (3.93)	0 (0)					p=<.001*
	Total	116 (18.86)	351 (57.07)	102 (16.58)	43 (6.99)	3 (0.48)					
Q4. I feel confident that I could extract an upper single rooted tooth with an intact crown, in an otherwise intact dentition.	Female	231 (59.84)	142 (36.78)	9 (2.33)	4 (1.03)	0 (0)					
	Male	175 (76.41)	50 (21.83)	3 (1.31)	1 (0.43)	0 (0)					p=<.001*
	Total	406 (66.01)	192 (31.21)	12 (1.95)	5 (0.81)	0 (0)					
Q5. I feel confident that I could remove visible retained roots of an upper left first molar with elevators or forceps.	Female	98 (25.38)	188 (48.7)	75 (19.43)	17 (4.4)	8 (2.07)					
	Male	80 (35.8)	106 (46.28)	36 (15.72)	6 (2.62)	1 (0.43)					p=0.047*
	Total	178 (28.94)	294 (47.8)	111 (18.04)	23 (3.73)	9 (1.46)					
Q6. I feel confident that section the tooth to facilitate elevation of the roots of an upper and lower molar.	Female	34 (8.8)	102 (26.42)	111 (28.75)	100 (25.9)	39 (10.1)					
	Male	38 (16.59)	79 (34.49)	53 (23.14)	46 (20.08)	13 (5.67)					p=0.001*
	Total	72 (11.7)	181 (29.43)	164 (26.66)	146 (23.73)	52 (8.45)					
Q7. Wound closure using appropriate suture materials.	Female	40 (10.36)	115 (29.79)	100 (25.9)	968 (24.87)	35 (9.06)					
	Male	38 (16.59)	75 (32.75)	46 (20.08)	47 (20.52)	23 (10.04)					p=0.086
	Total	78 (12.68)	190 (30.89)	146 (23.73)	143 (23.25)	58 (9.43)					
Q8. I feel confident to diagnose and manage acute pericoronitis.	Female	53 (13.73)	154 (39.89)	116 (30.05)	55 (14.24)	8 (2.07)					
	Male	43 (18.77)	97 (42.35)	59 (25.76)	26 (11.35)	4 (1.74)					p=0.345
	Total	96 (15.6)	251 (40.81)	175 (28.45)	81 (13.17)	12 (1.95)					

	Strongly agree		Agree		Neither agree or disagree		Disagree		Strongly disagree		p
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
Q9. I feel confident to assess an impacted mandibular third molar with respect to guidelines and recognise the need for surgical removal.											
Female	62 (16.06)	202 (52.33)	91 (23.57)	24 (6.21)	7 (1.81)						
Male	49 (21.39)	132 (57.64)	40 (17.46)	7 (3.05)	1 (0.43)						p=0.033*
Total	111 (18.04)	334 (54.3)	131 (21.3)	31 (5.04)	8 (1.3)						
Q10. I feel confident that I can recognise the clinical features of potentially malignant and malignant lesions of the oral cavity.											
Female	11 (2.84)	76 (19.68)	163 (42.22)	101 (26.16)	35 (9.06)						
Male	13 (5.67)	47 (20.52)	82 (35.8)	69 (30.1)	18 (7.86)						p=0.236
Total	24 (3.9)	123 (20)	245 (39.83)	170 (27.64)	53 (8.61)						
Q11. I feel confident that I can write an appropriate referral letter to a specialist in an appropriate time frame dependent on the clinical problem.											
Female	91 (23.57)	200 (51.81)	67 (17.35)	26 (6.73)	2 (0.51)						
Male	45 (19.65)	118 (51.52)	52 (22.7)	9 (3.93)	5 (2.18)						p=0.071
Total	136 (22.11)	318 (51.7)	119 (19.34)	35 (5.69)	7 (1.13)						
Q12. I feel competent to differentiate between pain of odontogenic and non-odontogenic origin.											
Female	13 (3.36)	130 (33.67)	162 (41.96)	70 (18.13)	11 (2.84)						
Male	15 (6.55)	85 (37.11)	90 (39.3)	32 (13.97)	7 (3.05)						p=0.244
Total	28 (4.55)	215 (34.95)	252 (40.97)	102 (16.58)	18 (2.92)						
Q13. I believe my learning in anatomy has been appropriate for my clinical needs in oral surgery.											
Female	19 (4.92)	134 (34.71)	160 (41.45)	58 (15.02)	15 (3.88)						
Male	23 (10.04)	94 (41.04)	81 (35.37)	27 (11.79)	4 (1.74)						p=0.020*
Total	42 (6.82)	228 (37.07)	241 (39.18)	85 (13.82)	19 (3.08)						
Q14. I am more confident about undertaking oral surgery because of my knowledge and understanding of head and neck anatomy.											
Female	14 (3.62)	76 (19.68)	192 (49.74)	85 (22.02)	19 (4.92)						
Male	21 (9.17)	68 (29.69)	93 (40.61)	38 (16.59)	9 (3.93)						p=0.001*
Total	35 (5.69)	144 (23.41)	285 (46.34)	123 (20)	28 (4.55)						
Q15. The only anatomical knowledge needed for oral surgery is that of jaw and tooth morphology.											
Female	3 (0.77)	5 (1.29)	6 (1.55)	160 (41.45)	212 (54.92)						
Male	4 (1.74)	8 (3.49)	14 (6.11)	86 (37.55)	117 (51.09)						p=0.006*
Total	7 (1.13)	13 (2.11)	20 (3.25)	246 (40)	329 (53.49)						

Chi-Square test. $p < 0.05^*$ is significant).

Table 3. Responses about the year of the education.

	The year of the education	Strongly agree		Agree		Neither agree or disagree		Disagree		Strongly disagree		p
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
Q1. The teaching that I have received in oral surgery has given me sufficient knowledge to undertake independent practise.	4. Year	21 (9.09)	71 (30.73)	76 (32.9)	53 (22.94)	10 (4.32)						
	5. Year	25 (6.51)	158 (41.14)	94 (24.47)	76 (19.79)	31 (8.07)						p=0.012*
	Total	46 (7.47)	229 (37.23)	170 (27.64)	129 (20.97)	41 (6.66)						
Q2. I feel confident to diagnose extraction indication for any tooth.	4. Year	33 (14.28)	148 (64.06)	43 (18.61)	7 (3.03)	0 (0)						
	5. Year	122 (31.77)	231 (60.15)	25 (6.51)	4 (1.04)	2 (0.52)						p=<.001*
	Total	155 (25.2)	379 (61.62)	68 (11.05)	11 (1.78)	2 (0.32)						
Q3. I feel confident that I could perform dental anesthesia and could choose the appropriate anesthetic for each patient.	4. Year	32 (13.85)	130 (56.27)	48 (20.77)	18 (7.79)	3 (1.29)						
	5. Year	84 (21.87)	221 (57.55)	54 (14.06)	25 (6.51)	0 (0)						p=0.007*
	Total	116 (18.86)	351 (57.07)	102 (16.58)	43 (6.99)	3 (0.48)						
Q4. I feel confident that I could extract an upper single rooted tooth with an intact crown, in an otherwise intact dentition.	4. Year	144 (62.33)	82 (35.49)	3 (1.29)	2 (0.86)	0 (0)						
	5. Year	262 (68.22)	110 (28.64)	9 (2.34)	3 (0.78)	0 (0)						p=0.305
	Total	406 (66.01)	192 (31.21)	12 (1.95)	5 (0.81)	0 (0)						
Q5. I feel confident that I could remove visible retained roots of an upper left first molar with elevators or forceps.	4. Year	48 (20.77)	111 (48.05)	58 (25.1)	11 (4.76)	3 (1.29)						
	5. Year	130 (33.85)	183 (47.65)	53 (13.8)	12 (3.12)	6 (1.56)						p=0.001*
	Total	178 (28.94)	294 (47.8)	111 (18.04)	23 (3.73)	9 (1.46)						
Q6. I feel confident that section the tooth to facilitate elevation of the roots of an upper and lower molar.	4. Year	12 (5.19)	50 (21.64)	72 (31.16)	73 (31.6)	24 (10.38)						
	5. Year	60 (15.62)	131 (34.11)	92 (23.95)	73 (19.01)	28 (7.29)						p=<.001*
	Total	72 (11.7)	181 (29.34)	164 (26.66)	146 (23.73)	52 (8.45)						
Q7. Wound closure using appropriate suture materials.	4. Year	18 (7.79)	49 (21.21)	57 (24.67)	82 (35.49)	25 (10.82)						
	5. Year	60 (15.62)	141 (36.71)	89 (23.17)	61 (15.88)	33 (8.59)						p=<.001*
	Total	78 (12.68)	190 (30.89)	146 (23.73)	143 (23.25)	58 (9.43)						
Q8. I feel confident to diagnose and manage acute pericoronitis.	4. Year	23 (9.95)	76 (32.9)	87 (37.66)	41 (17.74)	4 (1.73)						
	5. Year	73 (19.01)	175 (45.57)	88 (22.91)	40 (10.41)	8 (2.08)						p=<.001*
	Total	96 (15.6)	251 (40.81)	175 (28.45)	81 (13.17)	12 (1.95)						

The year of the education	Strongly agree		Agree		Neither agree or disagree		Disagree		Strongly disagree		p
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
Q9. I feel confident to assess an impacted mandibular third molar with respect to guidelines and recognise the need for surgical removal.											
4. Year	32 (13.85)	119 (51.51)	66 (28.57)	9 (3.89)	5 (2.16)						
5. Year	79 (20.57)	215 (55.98)	65 (16.92)	22 (5.72)	3 (0.78)						p=0.003*
Total	111 (18.04)	334 (54.3)	131 (21.3)	31 (5.04)	8 (1.3)						
Q10. I feel confident that I can recognise the clinical features of potentially malignant and malignant lesions of the oral cavity.											
4. Year	5 (2.16)	37 (16.01)	90 (38.96)	77 (33.33)	22 (9.52)						
5. Year	19 (4.94)	86 (22.39)	155 (40.36)	93 (24.21)	31 (8.07)						p=0.032*
Total	24 (3.9)	123 (20)	245 (39.83)	170 (27.64)	53 (8.61)						
Q11. I feel confident that I can write an appropriate referral letter to a specialist in an appropriate time frame dependent on the clinical problem.											
4. Year	41 (17.74)	113 (48.91)	53 (22.94)	20 (8.65)	4 (1.73)						
5. Year	95 (24.73)	205 (53.38)	66 (17.18)	15 (3.9)	3 (0.78)						p=0.011*
Total	136 (22.11)	318 (51.7)	119 (19.34)	35 (5.69)	7 (1.13)						
Q12. I feel competent to differentiate between pain of odontogenic and non-odontogenic origin.											
4. Year	5 (2.16)	67 (29)	104 (45.02)	48 (20.77)	7 (3.03)						
5. Year	23 (5.98)	148 (38.54)	148 (38.54)	54 (14.06)	11 (2.86)						p=0.008*
Total	28 (4.55)	215 (34.95)	252 (40.97)	102 (16.58)	18 (2.92)						
Q13. I believe my learning in anatomy has been appropriate for my clinical needs in oral surgery.											
4. Year	13 (5.62)	78 (33.76)	95 (41.12)	37 (16.01)	8 (3.46)						
5. Year	29 (7.55)	150 (39.06)	146 (38.02)	48 (12.5)	11 (2.86)						p=0.45
Total	42 (6.82)	228 (37.07)	241 (39.18)	85 (13.82)	19 (3.08)						
Q14. I am more confident about undertaking oral surgery because of my knowledge and understanding of head and neck anatomy.											
4. Year	11 (4.76)	52 (22.51)	115 (49.78)	38 (16.45)	15 (6.49)						
5. Year	24 (6.25)	92 (23.95)	170 (44.27)	85 (22.13)	13 (3.38)						p=0.134
Total	35 (5.69)	144 (23.41)	285 (46.34)	123 (20)	28 (4.55)						
Q15. The only anatomical knowledge needed for oral surgery is that of jaw and tooth morphology.											
4. Year	3 (1.29)	6 (2.59)	7 (3.03)	93 (40.25)	122 (52.81)						
5. Year	4 (1.04)	7 (1.82)	13 (3.38)	153 (39.84)	207 (53.9)						p=0.967
Total	7 (1.13)	13 (2.11)	20 (3.25)	246 (40)	329 (53.49)						

Chi-Square test. $p < 0.05^*$ is significant).

Table 4. Correlations between surgical suturing, extraction from a specific quadrant or jaw and use of surgical instruments.

		Q4	Q5	Q6	Q7
Q4	r	1	0.442	0.274	0.197
	p	-	< .001***	< .001***	< .001***
Q5	r	0.442	1	0.562	0.387
	p	< .001***	-	< .001***	< .001***
Q6	r	0.274	0.562	1	0.533
	p	< .001***	< .001***	-	< .001***
Q7	r	0.197	0.387	0.533	1
	p	< .001***	< .001***	< .001***	-

Pearson correlation test. * p < .05, ** p < .01, *** p < .001.

Table 5. Correlations between anatomical knowledge, extraction, use of surgical instruments and surgical suturing.

		Q13	Q14	Q15
Q4	r	0.111	0.138	-0.002
	p	0.006**	< .001***	0.969
Q5	r	0.250	0.244	0.041
	p	< .001***	< .001***	0.313
Q6	r	0.292	0.322	0.047
	p	< .001***	< .001***	0.249
Q7	r	0.267	0.293	0.031
	p	< .001***	< .001***	0.444

Pearson correlation test. * p < .05, ** p < .01, *** p < .001.

DISCUSSION

Oral and maxillofacial surgery is defined as the branch that conducts diagnosis and treatment of defects, injuries, and diseases, including both functional and aesthetic appearance of the soft and hard tissue of the oral and maxillofacial region (17). The most invasive procedures applied in dentistry are surgical procedures (18). In this study, 5th

year students who have more experience than 4th year students are more confident in themselves throughout the survey in general. Male students were more confident than female students in diagnosing an indication for extraction, performing dental anesthesia, forceps extraction, surgical extraction, suturing, diagnosing and treating acute pericoronitis, evaluation of embedded third molar teeth, and anatomy knowledge.

Among the students in the present study, 44.71% reported that oral surgery training was sufficient for practice after graduation. There was no statistically significant difference between the genders. However, the difference between the 4th and 5th year students was found to be statistically significant. It is believed that this may be associated with the fact that 5th year students see more patients in the clinic, and thus encounter groups of patients with various problems and learn to deal with these problems. In a study by Burdurlu *et al.* (19), 52.76% of the students reported that the oral surgery training was sufficient for them to practice it independently.

Most of the students who participated in the survey were female, which was consistent with the changing face of the dental workforce (20-22). In line with the previous studies, in the present study, male students had more self-confidence in simple and surgical extractions (17,21,23). This may be associated with the personalities of female students, or it may indicate that they were exposed to fewer surgical extractions in the clinic (24). However, it is less likely that the female students were exposed to fewer surgical extractions in the same period of time. This may also be likely associated with the excessive confidence of male in themselves. In contrast, some studies have reported that there is no difference in the levels of self-confidence in forceps extraction between female and male students (24,26). There was no statistically significant difference between the 4th and 5th year students in forceps extractions. However, it was observed that the fifth year students were more confident in themselves in surgical extractions. Increased clinical time and experience in these procedures may have increased the confidence of fifth year students in these areas.

Although there was a significant positive correlation between the students' self-confidence in performing forceps extractions and surgical extractions, the students' confidence in forceps

extractions was greater. Previous studies have also shown that students are more confident in themselves in forceps extractions (17,26,27). Surgical extractions are among the most invasive procedures in clinical environment, so students are less self-confident in these procedures (27). In addition, the lack of appropriate cases for undergraduate students in the clinic (28) and the surgical extractions being performed more often by graduate oral and maxillofacial surgery students may have caused this (19). It has been previously reported that the greatest independent variable in acquiring skills and self-confidence is practice. As the clinical experience of the students increases, their self-confidence also increases (19).

The students reported that they were confident in diagnosing an indication for extraction at a rate of 86.82% and in performing dental anesthesia at a rate of 75.93%. Students can combine the patient's medical history, clinical and radiological examination, as well as the patient's problems and diagnose an indication for extraction (24). The theoretical course of dental anesthesia in the curriculum is given in the fall and spring semesters of the 3rd year in Turkey. Practical applications continue from the 4th year to graduation. The students are aware of which anesthetic agent to be used in systemic diseases and physiological conditions. They learn to apply anesthetic techniques while attending to the patients; therefore, it is expected that they are confident in themselves when performing anesthesia.

In suturing, 43.57% of the students are confident in themselves. There is no difference between the genders. However, there is a statistically significant difference between the 4th and 5th year students. Fifth year students were able to practice more suturing, because they spent more time in the clinic compared with the 4th year students. Engaging in a lot of practice in the clinic provides the students with experience and confidence. In line with the present study, it has been reported

that the students are confident in suturing also in the previous studies (16,17,25).

Macluskey *et al.* (17) reported that students were confident in diagnosing acute pericoronitis, hemorrhage control, and requesting consultations. Of the students in the present study, 61.13% were confident in diagnosing and treating acute pericoronitis and 73.82% in requesting consultations. While the difference between female and male students was not statistically significant, the difference between the 4th and 5th year students was significant. The students know what drugs to prescribe in case of acute pericoronitis, because the students are asked to prescribe the drugs under the supervision of instructors in the clinic. In addition, many patients with systemic disease present to the surgical clinic (24). These patients are referred to a specialist physician before the surgical procedures and the students are asked to request consultation for their development in this regard (24). For this reason, they are expected to be confident in themselves in these subjects. Cabbar *et al.* (16) and Burdurlu *et al.* (19) reported higher levels of confidence in the diagnosis and treatment of acute pericoronitis, control of hemorrhage, and requesting a specialist doctor's consultation in their studies.

In the present study, 23.9% of the students were confident in recognizing malignant lesions and 39.51% were confident in differentiating between odontogenic and non-odontogenic pain. In the previous studies, it was reported that the students had less self-confidence in these issues (16,26). Students are unlikely to encounter malignant lesions in the clinic. Students mostly perform basic procedures. A revision can be made in these two areas to eliminate the shortcomings of the curriculum in this aspect. In the recognition of malignant lesions, it may be useful for the students to gain self-confidence if oral pathology

courses address visual memory more and reminder lectures are periodically held.

Another area to focus on is anatomy. Anatomy is one of the main components of dentistry. Anatomy knowledge is resorted to especially when performing anesthesia, performing surgical procedures, or using various examination methods. Therefore, a dentist should especially master the anatomy of the head and neck (29). In the present study, 43.9% of the students were confident in their anatomical knowledge related to oral surgery, but only 29.10% were confident in performing oral surgery based on their knowledge of the anatomy of the head and neck. It was determined that male students and fifth year students were more confident in themselves. It was also found that there was a positive correlation between confidence in anatomical knowledge and confidence in surgical procedures.

In the present study, 93.49% of the students did not agree with the statement "The anatomical knowledge required for oral surgery is only the morphology of the jaw and teeth". There was no statistical difference between 4th and 5th year students. This finding is also consistent with the previous studies (16,17,19). Students in the 1st and 2nd year are taught the anatomy of the whole body in the curriculum of dentistry. In addition, the anatomy of the head and neck is explained in the oral and maxillofacial surgery course given in the 3rd year. Thomas *et al.* recommend a constant renewal of anatomy-based knowledge not to forget the previously acquired knowledge (30).

The present study has several limitations. The survey we used in the study was delivered to 4th and 5th year dental students only registered with the Turkish Dental Association. Therefore, the number of participants is small, it would be more useful to carry out further studies with a larger

sample size. In this study, the self-confidence in performing oral surgery of the students studying at the faculties of dentistry in Turkey was evaluated. However, this study did not evaluate students' competencies, and therefore, it is impossible to determine whether students' self-confidence reflects their true skills.

CONCLUSION

Students must practice more under the supervision of instructors in order to gain self-confidence in subjects they lack. It was found that the students had low self-confidence in differentiating between odontogenic and non-odontogenic pain and recognizing malignant lesions or lesions with high malignant potential. In addition, the number of self-confident students in the practice of oral surgery due to their knowledge of the head and neck anatomy was very small. For this reason, especially the topics in which the students have issues should be identified and the topics in which the students feel inadequate should be emphasized in the oral surgery curriculum. Oral pathology as well as head and neck anatomy courses should be emphasized further, priority should be given to case-based courses, and reminder presentations should be made at certain intervals. In addition, surgical procedures should not be approached based on gender and it should be emphasized that these procedures depend on technical knowledge and skills. It is important to raise awareness of gender equality in students starting from the pre-graduation period.

ETHICAL APPROVAL

This study was approved by the Ethics Committee of Tokat Gaziosmanpasa University. ([Date: 11.06.2020, Meeting number: 2020/07, Project number: 20-KAEK-137])

FINANCIAL SUPPORT AND SPONSORSHIP

Nil.

CONFLICTS OF INTEREST

There are no conflicts of interest.

REFERENCES

1. Chuenjitwongsa S., Oliver R., Bullock A.D. Competence, competency based education, and undergraduate dental education: a discussion paper. *Eur J Dent Educ.* 2018; 22 (1): 1-8.
2. Akaltan K.F. Variety of preclinical and clinical education in dentistry. *Selcuk Dent J.* 2019; 6: 37-51.
3. Association ADE. ADEA Competencies for the New General Dentist "As approved by the 2008 ADEA House of Delegates." *J Dent Educ.* 2011; 75: 932-35.
4. Albino J.E., Young S.K., Neumann L.M., Kramer G.B., Andrieu S.C., Henson L., Horn B., Hendricson W.D. Assessing dental students' competence: best practice recommendations in the performance assessment literature and investigation of current

- practices in predoctoral dental education. *J Dent Educ.* 2008; 72 (12): 1405-35.
5. Lang L.A., Holmes D.C., Passon C., Trombly R.M., Astroth J.D., Tavel A.F. Introducing dental students to clinical patient care: the Complete Denture Prosthodontics Transition. *Clinic J Prosthodont.* 2003; 12 (3): 206-10.
 6. Singh G., Kaur R., Mahajan A., Thomas A.M., Singh T. Piloting direct observation of procedural skills in dental education in India. *Int J App Basic Med Res.* 2017; 7 (4): 239-42.
 7. Shetty V.B., Shirahatti R.V., Pawar P. Students' perceptions of their education on graduation from a dental school in India. *J Dent Educ.* 2012; 76 (11): 1520-26.
 8. Youngson C., Fox K., Boyle E., Blundell K., Baker R. Improving the quality of clinical teaching in a restorative clinic using student feedback. *Eur J Dent Educ.* 2008; 12 (2): 75-9.
 9. Nicolas E., Baptiste M., Roger-Leroi V. Clermont-Ferrand dental school' curriculum: an appraisal by last-year students and graduates. *Eur J Dent Educ.* 2009; 13 (2): 93-9.
 10. Polychronopoulou A., Divaris K. Perceived sources of stress among Greek dental students. *J Dent Educ.* 2005; 69 (6): 687-92.
 11. Henzi D., Davis E., Jasinevicius R., Hendricson W. In the students' own words: what are the strengths and weaknesses of the dental school curriculum? *J Dent Educ.* 2007; 71 (5): 632-45.
 12. Manakil J., George R. Self-perceived work preparedness of the graduating dental students. *Eur J Dent Educ.* 2013; 17 (2): 101-5.
 13. Gerzina T.M., McLean T., Fairley J. Dental clinical teaching: perceptions of students and teachers. *J Dent Educ.* 2005; 69 (12): 1377-84.
 14. Henzi D., Davis E., Jasinevicius R., Hendricson W., Cintron L., Isaacs M. Appraisal of the dental school learning environment: the students' view. *J Dent Educ.* 2005; 69 (10): 1137-47.
 15. Honey J., Lynch C.D., Burke F., Gilmour A.S.M. Ready for practice? A study of confidence levels of final year dental students at Cardiff University and University College Cork. *Eur J Dent Educ.* 2011; 15 (2): 98-103.
 16. Cabbar F., Burdurlu M.Ç., Tomruk C.O., Bank B., Atalay B. Students' perspectives on undergraduate oral surgery education. *BMC Med Educ.* 2019; 19 (1): 265.
 17. Macluskey M., Durham J., Bell A., Cowpe J., Crean J., Dargue A., Dawson L., Freeman C., Jones J., McDouagh A., McHanwell S., Marley J., Myrddin L., Millsopp L., Oliver R., Renton T., Taylor K., Thomson P. A national survey of UK final year students' opinion of undergraduate oral surgery teaching. *Eur J Dent Educ.* 2012; 16 (1): e205-e12.
 18. Jarosz K.F., Ziccardi V.B., Aziz S.R., Sue-Jiang S. Dental student perceptions of oral and maxillofacial surgery as a specialty. *J Oral Maxillofac Surg.* 2013; 71 (5): 965-73.
 19. Burdurlu M.Ç., Cabbar F., Dağaçan V., Gülen Çukurova Z., Doğanay Ö., Yalçın Ülker G.M., Atalay B., Gönül O., Özçakır Tomruk C. A city-wide survey of dental students' opinions on undergraduate oral surgery teaching. *Eur J Dent Educ.* 2020; 24 (2): 351-60.
 20. Gallagher J., Clarke W., Wilson N. Understanding the motivation: a qualitative study of dental students' choice of professional career. *Eur J Dent Educ.* 2008; 12 (2): 89-98.
 21. Stewart F., Drummond J., Carson L., Theaker E.D. Senior dental students' career intentions, work-life balance and retirement plans. *Br Dent J.* 2007; 203 (5): 257-63.
 22. Stewart F., Drummond J., Carson L., Reddick G.H. The future of the profession-a survey of dental school applicants. *Br Dent J.* 2004; 197 (9): 569-73.
 23. Stacey M., Morgan M., Wright C. The effect of clinical targets on productivity and perceptions of clinical competency. *J Dent Educ.* 1998; 62 (6): 409-14.

24. Menziletoğlu D., Işık B.K. The effect of clinical targets on productivity and perceptions of clinical competency. *Ege Uni Dental J.* 2018; 39 (3); 3: 134-39.
25. Shah S., Halai T., Patel J., Sproat C. Perceived confidence and experience in oral surgery among final year undergraduate students in a UK dental school. *Br Dent J.* 2018; 224 (3): 177-82.
26. Yiu C., McGrath C., Bridges S., Corbet E.F., Botelho M.G., Dyson J.E., Chan L.K. Self-perceived preparedness for dental practice amongst graduates of The University of Hong Kong's integrated PBL dental curriculum. *Eur J Dent Educ.* 2012; 16 (1): e96-e105.
27. Bartlett D., Coward P., Wilson R., Goodsman D., Darby J. Experiences and perceptions of vocational training reported by the 1999 cohort of vocational dental practitioners and their trainers in England and Wales. *Br Dent J.* 2001; 191 (5): 265-70.
28. Durham J., Moore U., Corbett I., Thomson P.J. Assessing competency in dentoalveolar surgery: a 3-year study of cumulative experience in the undergraduate curriculum. *Eur J Dent Educ.* 2007; 11 (4): 200-7.
29. Guttman G.D. The current status of the anatomical sciences curriculum in US and Canadian dental schools. *J Dent Educ.* 2003; 67 (3): 375-79.
30. Thomas S.J., Atkinson C., Hughes C., Revington P., R Ness A.R. Is there an epidemic of admissions for surgical treatment of dental abscesses in the UK? *Bmj.* 2008; 336 (7655): 1219-20.



Attribution (BY-NC) - (BY) You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggest the licensor endorses you or your use. (NC) You may not use the material for commercial purposes.