

Comparison of Surgery-Related Knowledge Levels Between Patient Groups with and without Experience of Impacted Tooth Extraction

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Abstract

Purpose: Comparison of the knowledge levels of patients in different demographic groups with and without impacted third molar experience. The authors' expectation was that experienced patients would have a higher level of knowledge.

Materials & Methods: Sixty-five patients (34 experienced, 31 inexperienced) with impacted third molar extraction indication were included in the study. A questionnaire with 23 questions concerning different operative phases and where the patients could write down their own questions were administered before surgeries. Demographic data (gender, age group and educational status) were also noted.

Results: Questionnaire success did not show a significant difference in different demographic groups and between patients with and without experience of third molar tooth extraction ($p>0.05$).

Conclusion: Dental surgeons should do their best to provide written and verbal information before surgical procedures, each patient should be evaluated as a first-time patient, regardless of demographic data and past experiences. It should not be neglected to provide a detailed information process.

Key words: dental anxiety; informed consent; oral surgery; patient participation; third molar

Introduction

Impacted third molar tooth surgery is a common surgical procedure in young and adult age groups and has been associated with high anxiety and restlessness for patients.^{1,2} Surgery-related long operative times, high incidence of edema, and high postoperative pain levels are factors affecting surgical anxiety. Conversely, patients with high anxiety have been reported to have longer operative times and more edema at the post-procedure 24th hour.³

It has been reported in medical literature that patients who will undergo third molar tooth surgery do not have sufficient information about the surgical process before the procedure and lack of surgical knowledge is correlated to even higher anxiety levels.^{1,3} In some publications, it has been claimed that the effect of lack of knowledge about surgery creates more anxiety than fear of pain during the procedure.⁴ Along with these information, it is an obvious fact that patients with a lack of information cannot effectively

participate in shared decision making and the surgical procedure acceptance rate will decrease resulting in delayed treatments.²

Shared decision making is very important in reducing surgical anxiety to improve treatment, increase patient comfort, and minimize perioperative risks.⁵ Maintaining a calm clinical environment during these procedures, supporting the patient with preoperative anxiolytics, providing analgesia in advance, building trust in the surgical team, and increasing operative knowledge by informing the patient about the procedure, comforting the patient, and gaining confidence are key features.

The aim of the present study was to analyze the knowledge levels of patients regarding the preoperative, intraoperative, and postoperative parts of the procedure and patients' expectations about the procedure and associate this knowledge with demographic data, education level and experience of impacted wisdom tooth surgery in a setting where presurgical knowledge is given through verbal communication and information leaflets. The hypothesis on which

the study was based on was that patients who had experience with third molar extraction would have higher surgical knowledge. If the hypothesis on which the study is based is not realized, it will be concluded that even patients with impacted wisdom teeth surgery experience should be informed as thoroughly as patients who apply for the first time and have no experience.

Materials and Methods

This prospective survey study was approved by Ankara University Faculty of Dentistry Clinical Research Ethics Committee with decision number 05/02. The study involved 65 patients (25 male (38.5%) and 40 female (61.5%)) who applied to Ankara University Faculty of Dentistry, Department of Oral and Maxillofacial Surgery between 2017 - 2020 with the indication of impacted third molar extraction under local anesthesia. All patients were informed about the study prior to surgery and questionnaires were administered after their consent was obtained.

The patients were divided into 2 groups according to previous extraction history (G1= experience of impacted tooth extraction, n=34; G2= no experience of impacted tooth extraction, n=31). Before giving the questionnaire to the patients, how they were asked to answer the questions and the VAS scale were described. In the questionnaire presented in Table 1, patients' gender, age, education level, history of previous impacted third molar extraction, and extraction indications were noted, and the remaining section was divided into patient questions, preoperative, intraoperative and postoperative knowledge subheadings (8, 6 and 9 questions respectively). While the patients were filling out the questionnaire, the time was not kept, they filled it out in their own time intervals.

Before the surgical procedure, the questionnaires were examined and patient questions were answered, and an informative speech was made regarding the existing false information. The procedures of the patients continued routinely after this phase.

Statistical analysis: SPSS 11.5 program was used in the analysis of the data. Mean \pm standard deviation and median (minimum-maximum) were used as descriptors for quantitative variables, and the number of patients (percentage) for qualitative variables. Fisher-exact test was used to examine the relationship between two qualitative variables. The statistical significance level was taken as 0.05.

Results

The study sample consisted of 25 male and 40 female patients (38.5 and 61.5% respectively). Three patients (4.6%) were under the age of 18, 58 (89.2%) were between 18-40 years of age and 4 (6.2%) were above the age of 40. Grand majority of patients were high school or university graduates (n=40, 26%; n=28, 43.1% respectively) while only 4 patients (6.2%) were primary school, 2 patients (3.1%) were middle school, and 3 patients (4.5%) were master's degree graduates. The indications for tooth extraction were gathered under two headings, extraction due to pain and infection, and prophylactic and orthodontic extractions (n=14, 21.5%; n=51, 78.5% respectively). Experience of impacted tooth extraction was present in 34 patients (52.3%) while 31 patients (47.7%) did not have any experience. Five patients (7.7%) had questions related to the preoperative phase, 18 patients (27.7%) had questions related to the intraoperative phase, and 9 patients (13.8%) had questions related to the postoperative phase. The main questions were whether the tooth must be extracted or not, how much the injection is going to hurt and how many days is needed for recovery. The answers given by patients to the questionnaire can be observed in Table 2.

When the demographic data (hyperref[Table 3]Table 3 and hyperref[Table 4]Table 4) and impacted tooth extraction experiences (hyperref[Table 5]Table 5) of the patients were compared

Table 1. Patient questionnaire

1- Please write down your questions related to preoperative, intraoperative and postoperative periods of surgery:
 2- Questions regarding the preoperative period:
 PROQ1: Do you think it is necessary to have your teeth extracted? Yes /No /I don't know
 PROQ2: Do you want to have your teeth extracted? Yes /No /Not sure
 PROQ3: Do you think you should eat before the procedure? Yes /No /I don't know
 PROQ4: Do you think you should clean your teeth before the procedure? Yes /No /I don't know
 PROQ5: Do you think you should use any medication before the procedure? Yes (Which drug for how long?) /No /I don't know
 PROQ6: Do you think the person who will do the procedure will be a dental student, a doctoral student or a specialist dentist? / I don't know.
 PROQ7: Have you listened to the impacted tooth extraction experiences of the people around you? Yes (Good or bad?) / No
 PROQ8: Do you know what sterilization is? Yes/ I do not know
 3- Questions regarding the intraoperative period:
 INOQ1: Do you know whether local or general anesthesia is used? Local / General / I don't know
 INOQ2: How much discomfort do you think you will feel during the procedure? Specify a number from 0-10 / I don't know
 INOQ3: How long do you think the procedural time will be? / I do not know
 INOQ4: Do you think all teeth will be extracted at once? Yes / No / I don't know
 INOQ5: Do you think it is necessary to cut the mucosa? Yes / No / I don't know
 INOQ6: Do you think stitching is necessary? Yes / No / I don't know
 4- Questions regarding the postoperative period:
 POOQ1: How much discomfort do you think you will feel after the procedure? Specify a number from 0-10 / I don't know
 POOQ2: How long do you think your recovery will last? / I do not know
 POOQ3: Do you think you will have trouble with daily activities such as talking, eating, laughing? Yes / No / I don't know
 POOQ4: Do you think there will be swelling, bleeding, bruising? Yes/ No/ I don't know
 POOQ5: What do you think you can do to reduce these complaints? / I do not know
 POOQ6: What do you think you should eat and drink after the procedure?..... / I do not know
 POOQ7: How should you take care of your mouth? / I do not know
 POOQ8: Do you think you can smoke or drink alcohol after the procedure? Yes / No / I don't know
 POOQ9: When do you think you should come back for a checkup? / I do not know

with the results obtained from the questionnaires, no determinant parameter affecting the knowledge of the patients concerning the procedure was encountered. There was no statistically significant difference between groups with or without impacted tooth extraction experience regarding knowledge related to surgery.

Discussion

Studies have shown that the lack of knowledge about the surgical procedure is one of the biggest causes of preoperative anxiety in patients who are candidates for minor oral surgery and that providing patients with high quality information, besides its medico-legal importance, might facilitate patient participation in clinical

Table 2. Answers to patient questionnaire

PROQ1, n(%)	Yes	52 (82,5)
	No	7 (11,1)
	No knowledge	4 (6,4)
PROQ2, n(%)	Yes	52 (80,0)
	No	10 (15,4)
	No knowledge	3 (4,6)
PROQ3, n(%)	Yes	8 (12,3)
	No	55 (84,6)
	No knowledge	2 (3,1)
PROQ4, n(%)	Yes	65 (100,0)
PROQ5, n(%)	Yes	11 (16,9)
	No	47 (72,3)
	No knowledge	7 (10,8)
PROQ6, n(%)	Yes	28 (43,8)
	No	9 (14,1)
	No knowledge	27 (42,1)
PROQ7, n(%)	Good	20 (31,3)
	Bad	26 (40,6)
	No experience	18 (28,1)
PROQ8, n(%)	Yes	31 (47,7)
	No	11 (16,9)
	No knowledge	23 (35,4)
INOQ1, n(%)	Correct	51 (78,5)
	No knowledge	14 (21,5)
INOQ2	Mean ± SD	3,81±2,80
	Mean (Min.-Max.)	3,00 (0,00-10,00)
INOQ3	Mean ± SD	33,68±18,29
	Mean (Min.-Max.)	30,00 (5,00-90,00)
INOQ4, n(%)	Yes	10 (16,7)
	No	48 (80,0)
	No knowledge	2 (3,3)
INOQ5, n(%)	False	6 (9,2)
	Correct	54 (83,1)
	No knowledge	5 (7,7)
INOQ6, n(%)	False	5 (7,7)
	Correct	55 (84,6)
	No knowledge	5 (7,7)
POOQ1	Mean ± SD	5,44±2,66
	Mean (Min.-Max.)	5,00 (0,00-10,00)
POOQ2, n(%)	0-6 days	28 (45,9)
	7-12 days	21 (34,4)
	≥ 13 days	12 (19,7)
POOQ3, n(%)	Yes	56 (86,2)
	No	6 (9,2)
	No knowledge	3 (4,6)
POOQ4, n(%)	Yes	56 (86,2)
	No	6 (9,2)
	No knowledge	3 (4,6)
POOQ5, n(%)	Correct	36 (56,2)
	No knowledge	28 (43,8)
POOQ6, n(%)	False	4 (6,2)
	Correct	54 (83,1)
POOQ7, n(%)	No knowledge	7 (10,7)
	Correct	49 (76,6)
POOQ8, n(%)	No knowledge	15 (23,4)
	False	4 (6,2)
POOQ9, n(%)	Correct	60 (92,3)
	No knowledge	1 (1,5)
POOQ9, n(%)	False	12 (18,8)
	Correct	35 (54,7)
POOQ9, n(%)	No knowledge	17 (26,5)

decision-making.¹

The current clinical practice in informing impacted third molar surgery patients is generally conducted through verbal information and information leaflets as in the current study.¹ When the results of the study were interpreted, there was no difference in knowledge

between patients with and without surgical experience in an environment where information was given via information sheet and verbal communication. This may be since patients do not fully read the information leaflets or do not understand fully understand the information provided. Verbal communication, which is made after the patients read the information leaflets, will only be able to be done through the parts that the patients remember and understand from what they have read. In this method of giving information, more effective results can be obtained when the same information is given orally by the physician after reading the information booklets. However, this arrangement will cause a prolongation of the time allotted to inform. This situation suggests the necessity of researching alternative methods.

There are various processes related to informing patients about the surgical process accurately and completely including internet use and online information seeking and audiovisual methods like watching surgical videos. In the study conducted by Hanna et al., it was stated that internet use and online information seeking improved the patient's preparation for surgery but was not associated with better procedural understanding.¹ In another study Kazancıoğlu et al.⁶ observed the effects of watching a third molar surgery video and correlated it to anxiety levels before and after surgeries. They reported that patients who watched the surgical video had increased anxiety levels but, in the meantime, increased knowledge levels. They observed that especially incisions of the mucosa and bone removal was found to be rather fear-provoking. Choi et al.⁷ investigated a similar method and used an audiovisual slide presentation in their study. According to the results of the study, it was observed that the level of knowledge of the patients who were informed in this way was higher than the patients who were informed only with the information leaflet. The slide presentation used in the study was narrated and included the explanation of the surgical procedure and 8 complications that may occur with simple illustrations, and the patients watched this presentation after reading the information leaflets. The study also reported that demographic factors did not affect anxiety scores such as in the present study.

Although it is a known fact that informing the patient more accurately and fully will reduce the patient's anxiety about the procedure, which method should be used is still a matter of debate. Even in studies using different methods, the information leaflet has been used, and different methods have been tried in addition to this method. Among the reasons for this are undoubtedly medico-legal concerns, namely the need for the patient to read and sign a consent form. While studies generally focus on the information leaflet and an additional method, the relationship between the patient and the dental surgeon and verbal communication is a factor that should never be overlooked. Good communication between the patient and the dental surgeon and the patients' trust in their dental surgeon will reduce the patient's anxiety.

Conclusion

The level of knowledge about surgery was independent of demographic data and existing impacted tooth extraction experience. Based on the results of the study, it was concluded that detailed information about the surgery should be given to each patient, the patient's questions should be taken and carefully answered, regardless of their social, cultural, and economic levels and previous experiences.

Author Contributions

I.G., MA, O.A., B.D. and P.B. have made substantial contributions to conception and design, acquisition of data, analysis and interpre-

Table 3. The relationship of gender and age groups with correct or false answered questions.

Variables		Gender				p value	Age Groups						p value
		Male		Female			<18		18-40		>40		
		n	%	n	%		n	%	n	%	n	%	
PROQ3	False	6	25,0	2	5,1	0,023a	0	0,0	7	12,5	1	25,0	0,633a
	Correct	18	75,0	37	94,9		3	100,0	49	87,5	3	75,0	
PROQ4	Correct	25	100,0	40	100,0	-	3	100,0	58	100,0	4	100,0	-
	False	9	64,3	19	82,6	0,255a	2	100,0	25	73,5	1	100,0	1,000a
PROQ6	Correct	5	35,7	4	17,4	0,733a	0	0,0	9	26,5	0	0,0	1,000a
	False	12	70,6	19	76,0		-	-	28	73,7	3	75,0	
PROQ8	Correct	5	45,5	6	24,0	-	-	10	26,3	1	25,0	1,000a	
	False	20	100,0	31	100,0	-	2	100,0	46	100,0	3		100,0
INOQ1	Correct	2	9,1	4	10,5	0,857a	0	0,0	5	9,4	1	25,0	0,541a
	Correct	20	90,9	34	89,5		3	100,0	48	90,6	3	75,0	
INOQ5	False	3	13,6	2	5,3	0,346a	0	0,0	4	7,5	1	25,0	0,475a
	Correct	19	86,4	36	94,7		3	100,0	49	92,5	3	75,0	
POOQ5	Correct	10	100,0	26	100,0	-	3	100,0	31	100,0	2	100,0	-
	False	1	4,5	3	8,3	1,000a	0	0,0	4	7,7	0	0,0	1,000a
POOQ6	Correct	21	95,5	33	91,7	-	3	100,0	48	92,3	3	100,0	-
	False	16	100,0	33	100,0	-	3	100,0	44	100,0	2	100,0	-
POOQ7	Correct	1	4,0	3	7,7	1,000a	0	0,0	3	5,3	1	25,0	0,378a
	Correct	24	96,0	36	92,3		3	100,0	54	94,7	3	75,0	
POOQ8	False	6	33,3	6	20,7	0,493a	1	33,3	11	26,2	0	0,0	1,000a
	Correct	12	66,7	23	79,3		2	66,7	31	73,8	2	100,0	

a: Fisher-exact test; PROQ: Preoperative question; IOQ: Intraoperative question; POOQ: Postoperative question.

Table 4. The relationship of educational status with correct or false answered questions.

Variables		Educational Status						p value
		PS	MS	HS	C	U	MD	
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
PROQ3	False	0 (0,0)	0 (0,0)	6 (24,0)	1 (50,0)	1 (3,6)	0 (0,0)	0,126a
	Correct	3 (100,0)	2 (100,0)	19 (76,0)	1 (50,0)	27 (96,4)	3 (100,0)	
PROQ4	Correct	4 (100,0)	2 (100,0)	26 (100,0)	2 (100,0)	28 (100,0)	3 (100,0)	-
	False	3 (100,0)	2 (100,0)	11 (78,6)	2 (100,0)	10 (66,7)	0 (0,0)	0,463a
PROQ6	Correct	0 (0,0)	0 (0,0)	3 (21,4)	0 (0,0)	5 (33,3)	1 (100,0)	0,295a
	False	2 (100,0)	1 (100,0)	6 (50,0)	1 (100,0)	19 (82,6)	2 (66,7)	
PROQ8	Correct	0 (0,0)	0 (0,0)	6 (50,0)	0 (0,0)	4 (17,4)	1 (33,3)	0,295a
	False	1 (100,0)	1 (100,0)	19 (100,0)	2 (100,0)	25 (100,0)	3 (100,0)	
INOQ1	Correct	0 (0,0)	0 (0,0)	3 (12,5)	0 (0,0)	3 (11,1)	0 (0,0)	1,000a
	False	4 (100,0)	1 (100,0)	21 (87,5)	2 (100,0)	24 (88,9)	2 (100,0)	
INOQ5	Correct	0 (0,0)	0 (0,0)	3 (12,5)	0 (0,0)	2 (8,0)	0 (0,0)	0,884a
	False	4 (100,0)	2 (100,0)	21 (87,5)	2 (100,0)	23 (92,0)	3 (100,0)	
INOQ6	Correct	2 (100,0)	2 (100,0)	14 (100,0)	1 (100,0)	16 (100,0)	1 (100,0)	-
	False	0 (0,0)	0 (0,0)	2 (9,5)	0 (0,0)	2 (7,4)	0 (0,0)	1,000a
POOQ5	Correct	3 (100,0)	2 (100,0)	19 (90,5)	2 (100,0)	25 (92,6)	3 (100,0)	-
	False	3 (100,0)	2 (100,0)	20 (100,0)	2 (100,0)	21 (100,0)	1 (100,0)	
POOQ6	Correct	1 (25,0)	0 (0,0)	2 (7,7)	0 (0,0)	1 (3,7)	0 (0,0)	0,533a
	Correct	3 (75,0)	2 (100,0)	24 (92,3)	2 (100,0)	26 (96,3)	3 (100,0)	
POOQ7	False	0 (0,0)	0 (0,0)	5 (25,0)	0 (0,0)	6 (28,6)	1 (50,0)	0,925a
	Correct	1 (100,0)	1 (100,0)	15 (75,0)	2 (100,0)	15 (71,4)	1 (50,0)	

a: Fisher-exact test; PROQ: Preoperative question; IOQ: Intraoperative question; POOQ: Postoperative question, PS: Primary School; MS: Middle School; HS: High School; C: College; U: University; MD: Master's Degree.

tation of data, have been involved in drafting the manuscript and revising it critically for important intellectual content, have given final approval of the version to be published, agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Conflict of Interest

Authors declare that they have no conflict of interest.

Table 5. The relationship of experience of impacted tooth extraction with correct or false answered questions.

Variables		Experience of impacted tooth extraction				p value
		Male		Female		
		n	%	n	%	
PROQ3	False	6	20,0	2	6,1	0,136a
	Correct	24	80,0	31	93,9	
PROQ4	Correct	31	100,0	34	100,0	-
PROQ6	False	15	88,2	13	65,0	0,137a
	Correct	2	11,8	7	35,0	
PROQ8	False	11	73,3	20	74,1	1,000a
	Correct	4	26,7	7	25,9	
INOQ1	Correct	19	100,0	32	100,0	-
INOQ5	False	3	10,7	3	9,4	1,000a
	Correct	25	89,3	29	90,6	
INOQ6	False	3	11,1	2	6,1	0,649a
	Correct	24	88,9	31	93,9	
POOQ5	Correct	16	100,0	20	100,0	-
POOQ6	False	3	12,0	1	3,0	0,305a
	Correct	22	88,0	32	97,0	
POOQ7	Correct	21	100,0	28	100,0	-
POOQ8	False	3	9,7	1	3,0	0,347a
	Correct	28	90,3	32	97,0	
POOQ9	False	6	31,6	6	21,4	0,506a
	Correct	13	68,4	22	78,6	

a: Fisher-exact test; PROQ: Preoperative question; IOQ: Intraoperative question; POOQ: Postoperative question.

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