



Patient's Knowledge and Attitude towards Post-extraction Instructions Following Permanent Teeth Extraction

**Sundar Ramalingam ^{a≡}, Mohammed Sulaiman Alsaleh ^{b*⊙},
Nasser Marje Almhidy ^{c⊙}, Abdurrahman Abdurrazzaq Aljeadi ^{d#},
Omar Mohammed Almosa ^{d#}, Abdulaziz Mohammed Alshehri ^{d#},
Abdulaziz Abdulrahman Almayouf ^{d#}, Abdulaziz Fahad Alosaimi ^{d#},
Abdulrahman Mohammed Aldosari ^{d#}, Mohammed Mansoor Albaker ^{e†},
Abdullah Mansoor Albaker ^{e†} and Rahaf Mohammed Alrefaie ^{f‡}**

^a Department of Oral and Maxillofacial Surgery, College of Dentistry, King Saud University, Saudi Arabia.

^b Department of Oral and Maxillofacial Surgery, Ministry of National Guard Health Affairs, King Abdulaziz Medical City, Saudi Arabia.

^c Ministry of Health, Al-Aziziyah Public Medical Center, Qurayyat, Saudi Arabia.

^d College of Dentistry, King Saud University, Saudi Arabia.

^e College of Dentistry, Riyadh Elm University, Saudi Arabia.

^f College of Dentistry, King Saud University, Saudi Arabia.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2021/v33i60A34516

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/78555>

Original Research Article

**Received 10 October 2021
Accepted 19 December 2021
Published 20 December 2021**

ABSTRACT

Background: Post extraction complications may arise if the extraction done is traumatic or the tooth was placed at a difficult position; this could lead to post-extraction complications and knowledge about the prevention of the same is the need of the hour. Hence, the present study was

[≡] Consultant;

[⊙] OMFS Resident;

[#] General Dentist;

[†] Dental Student;

*Corresponding author: E-mail: mohammed.s.alsaleh@gmail.com;

conducted to explore the knowledge of the participants about the prevention of post-extraction complications.

Material and Methods: This was a questionnaire-based cross-sectional descriptive study.

A total of 135 patients (75 males and 61 females) were included in the study by the convenient method of sampling that visited the dental clinics of the College of Dentistry, Validated questionnaire was asked about post-extraction preventive knowledge. The statistical analysis was performed by the Statistical Package for Social Science version 21 (SPSS Inc Chicago, IL, USA). The significant value was obtained by using the Chi-Square test and $p < 0.05$ was set to be significant.

Results: Females more than 50 years of age group had better post-extraction preventive knowledge and there was significant relation ($p < 0.05$). Socioeconomic level and gender distribution had significant relation with the level of post-extraction preventive knowledge ($p < 0.05$). The patients who had better knowledge followed their instructions precisely.

Conclusion: It was concluded that female, patients above the middle age group and more qualified patients had more post-extraction preventive knowledge and they also followed the instructions very strictly. The importance of the study came out that dentists and the dental assistants should explain and convince patients to follow proper post-operative instructions to avoid post operative complications.

Keywords: Extraction; post operative complications; surgical extraction.

1. INTRODUCTION

Teeth are among the most important part of our body, which has a masticatory, aesthetic and phonetic function. Extensive caries, trauma, teeth mobility tooth due to severe periodontal disease, large periapical abscess, overcrowding of teeth in the dental arch, impacted third molars and orthodontic purposes are the main reasons for teeth extraction [1]. Now a day's tooth extraction can be reduced as the entry of more advanced treatment procedures but in some cases extractions are unavoidable. Still, extraction is the most common procedure done in dentistry, especially in developing countries. Knowledge about post-extraction complications and their management can prevent the occurrence of untoward sequelae following extraction. Previous studies have shown that preoperative patient education can help in decreasing postoperative anxiety, pain, and complications [2].

Compliance is the common word to describe organ donor patients' cooperation with clinical drug utilization, which is quintessential for therapy to achieve the required results [1]. Sufficient patient education provided after any surgical intervention has somewhat proven to develop patients' stability and reduce postoperative complications [2,3]. Such education includes anticipation of postoperative events, correction of possible misunderstanding of patients receiving medical instructions, and the successful achievement of the instructions given

by physicians in order to abate expected complications and improve patients' health [4]. Providing the patient with greater information generally leads to increased compliance with treatment recommendations [5]. The more the information delivered by the physician, the greater the reduction in calling patients for recall visits [5].

Having heard personality disorders can generate a non-compliance attitude [6], sex and education can be correlated in the event of postoperative compliance [7].

Tobacco smoking is an implemented cause to decrease dental socket healing post-operatively [8]. In a certain study, tobacco was believed to be the source of noncompliance, with almost half of the smokers that didn't cease smoking during the postoperative surgery period without considering any of the biographic data or whether the instructions were delivered verbally or in a written matter [9].

Merging both verbal and written instructions turned out to be mostly preferred by patients, especially those with lower educational backgrounds [2,8,9]. Generally announced post-operative patient satisfaction positively impacts compliance and, therefore upgrades the quality of treatment [10]. Since there is paucity of data regarding the patient's Knowledge and attitude towards post-extraction instructions following permanent teeth extraction in this region of Saudi, hence the present study was conducted

with the aim to explore the same among the Saudi Population.

2. MATERIALS AND METHODS

A cross-sectional study was conducted in which a survey questionnaire was distributed to dental colleges as well as public and private hospitals. The survey will include questions aimed towards patients who had undergone extraction. The participants will be asked questions related to post-operative instructions. The questions involved general knowledge of post-operative instructions. The study sample will include nearly 300 participants including males and females of any nationality. The sample size will be determined with a power of 0.95 and an estimated standard deviation of 1. The questionnaire was distributed among 300 individuals.

All data will be entered into SPSS for statistical analysis. Descriptive Statistics (tables, frequency, percentage, graph, mean, median, standard deviation, and Interquartile Range) will be presented. Also, for statistical comparison, Chi-Square will be used and p-value < 0.05 was set to be significant.

The study should take approximately 3 months for data collection and another month for data analysis and paper writing. The questionnaire was self-developed by the research members as it follows the proper post-operative instructions following any dental extraction.

3. RESULTS

A total of 135 questionnaires were filled in by people from dental colleges as well as public and private hospitals. The great majority of respondents were above 50 years (37%) and followed by 18- 25 years old (30.4%) (Table 1).

A total of males 74 (54.8%) and females (45.2%) have participated in the study (Table 2).

The standard of living among the participants was simple (35.6%), medium (33.3%), and high (31.1%) (Table 3).

Almost 96.2 % of participants have extracted permanent teeth, of which only 23% have extracted more than 5 teeth and 25.1% have extracted more than one tooth. The expected period of bleeding after extraction was observed by 59.2% of responses is 5 to 45 minutes followed by 5 hours to whole day by 17% of responses. 85.2 % agreed that application of cotton stops bleeding, in which 48% responded as replacing cotton after the extraction in 30 - 60 minutes and 72.5 % believe to rinse the mouth after extraction out of which 60.5% agreed to use the rinse after a whole day of extraction whereas 27.5% deny its use. The use of salt and water rinse helps in healing the wound was agreed by a maximum of (119) 88% of responses and whereas 7 responded to use of mouthwash to be more favourable in healing. Almost 77% responded that spitting can affect bleeding whereas 27.5% agreed to spit on the day of extraction and 43% agreed to smoke, 71.5% can smoke after a whole day of extraction, 89.6% agreed to drink after extraction in which a cool temperature is preferred by 92.4%. The normal duration of flatulence of one to two days was agreed by 47.5%, in which 71% agreed that cold pack reduces the surgical dislocation and 42.3% agreed to use it for 2 hours. Semi-seated sleep help to relieve bleeding was responded by 72.8% of which 50% agreed with the position of almost lying down. Out of 135 responses, only 34% believe necessary to advise painkillers after extraction for three days (43%) and 57% responses agreed obligatory use of antibiotic in some cases (Table 4).

Table 1. Frequency distribution of Age groups and association with knowledge of post operative extraction instructions

Age Group	N	%	P-value
18-25	41	30.4%	0.021*
25-35	23	17%	
35-50	21	15.6%	
50	50	37%	

*significant p<0.05

Table 2. Frequency distribution of Gender and association with knowledge of post operative extraction instructions

Gender	N	%	P-value
Female	61	45.2%	0.031*
Male	74	54.8%	

*significant $p < 0.05$

Table 3. Frequency distribution of Standard of living and its association with knowledge of post operative extraction instructions

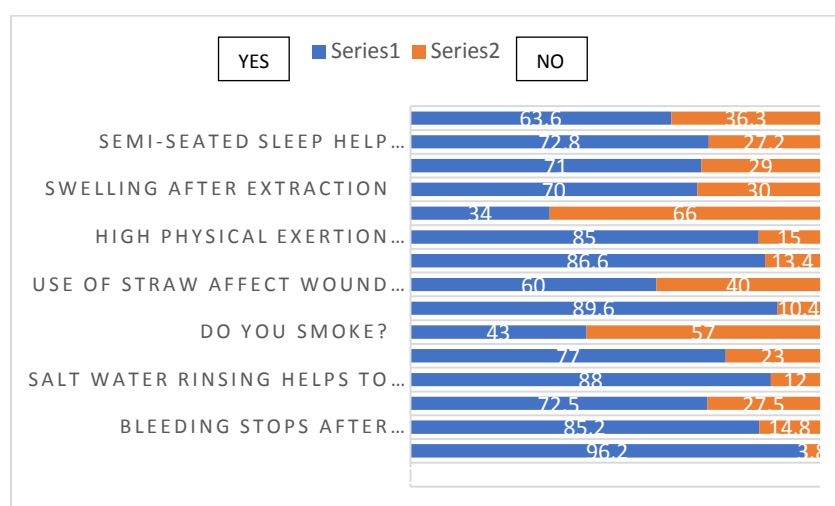
Standard of Living	N	%	P-value
SIMPLE	48	35.6%	0.017*
MEDIUM	45	33.3%	
HIGH	42	33.3%	

*significant $p < 0.05$

Table 4. Frequency distribution of Questionnaire

S.No.	Questions	Responses	N (%)
1	Teeth extracted previously	<ul style="list-style-type: none"> • One • More than one and less than five • More than five 	70 (51.9%) 35 (25.1%) 30 (23%)
2	The expected period of bleeding after extraction	<ul style="list-style-type: none"> • 5 to 45 minutes • 45 minutes to two hours • Two to five hours • five hours to a whole day 	80 (59.26%) 20 (14.81%) 11 (8.15%) 24 (17.78%)
3	How long does it take to replace the cotton after the extraction	<ul style="list-style-type: none"> • 30-60 minutes • One to two hours • Two to five hours 	41 (48%) 20 (23.5%) 24 (28.5%)
4	When can you rinse	<ul style="list-style-type: none"> • after two hours • after four hours • Six hours later • Eight hours later • After a whole day 	4 (4.1%) 6 (6.2%) 18 (18.3%) 12 (12.5%) 58 (60.5%)
5	What is the appropriate solution for rinsing the mouth	<ul style="list-style-type: none"> • Mouthwash (contains chlorhexidine) • Mouthwash (does not contain chlorhexidine) • Only water 	7 (43.8%) 5 (31.2%) 4 (25%)
6	When can you spit?	<ul style="list-style-type: none"> • Immediately after extraction • On the day of the extraction • next day 	5 (17.5%) 8 (27.5%) 16 (55%)
7	When can smoke after extraction	<ul style="list-style-type: none"> • Eight hours later • Twelve hours later • After a whole day • After two days 	6 (12.2%) 3 (6.1%) 35 (71.5%) 5 (10.2%)
8	What is the temperature of the drink?	<ul style="list-style-type: none"> • Cool • Warm • Hot 	110 (92.4%) 4 (3.3%) 5 (4.3%)
9	When can you use the	<ul style="list-style-type: none"> • Eight hours later 	5 (10%)

S.No.	Questions	Responses	N (%)
	straw	<ul style="list-style-type: none"> • Twelve hours later • After a whole day • After two days 	12 (23.5%) 23 (45%) 11 (21.5%)
10	If yes, what is the food temperature	<ul style="list-style-type: none"> • Cool • Warm • Hot 	100 (87.7%) 7 (6.15%) 7 (6.15%)
11	What is the nature of food	<ul style="list-style-type: none"> • Hard • Soft • Liquid 	17 (13.1%) 89 (65.9%) 29 (21%)
12	When can you brush your teeth after extraction?	<ul style="list-style-type: none"> • Twelve hours later • after a day • after two days • after a week 	20 (14.7%) 48 (35.5%) 34 (25%) 33 (24.8%)
13	Answer is yes, when can you make a physical effort?	<ul style="list-style-type: none"> • Twelve hours later • after a day • after two days • after a week 	10 (9%) 65 (59%) 23 (21%) 12 (11%)
14	Is antibiotic use obligatory	<ul style="list-style-type: none"> • obligatory in all cases • obligatory in some cases • Absolutely not obligatory 	34 (25%) 78 (57.5%) 23 (17.5%)
15	How long will the antibiotics be used?	<ul style="list-style-type: none"> • 3 days • 5 days • 7 days 	11 (11.5%) 39 (40%) 47 (48.5%)
16	The normal duration of flatulence	<ul style="list-style-type: none"> • One to two days • Three days to five days • whole week 	19 (47.5%) 11 (27.5%) 10 (25%)
17	Use of cold pack	<ul style="list-style-type: none"> • Twelve hours • Two hours • 6 hours • Full Day 	7 (30%) 11 (42.3%) 5 (19.7%) 3 (8%)
18	When should the suture be removed	<ul style="list-style-type: none"> • after a week • After two weeks • Three weeks later • After a whole month 	10 (20.5%) 21 (42.8%) 5 (10.2%) 13 (26.5%)



Graph 1. Responses based on questionnaire of post-extraction instructions

There were 63.6% responded difficulty in oral movement and 72.8% but semi-seated sleep help relieve pain and 71% agreed cold pack relieves flatulence and 70% experienced swelling after surgical extraction, 34% agreed to take pain killers and 60% understand the effect of wound healing on the use of straws. 85.2% responded to applying cotton for stopping bleeding and 43% agreed to smoke after extraction.

4. DISCUSSION

Knowledge about post-extraction complications and their management can prevent the occurrence of untoward sequelae following extraction. There are many studies that have depicted that preoperative patient education can help in decreasing postoperative anxiety, pain, and complications [2].

Keogh T found that the higher socioeconomic status group had clearer knowledge, more positive attitudes, and more appropriate behaviour related to dental health than those of the lower socioeconomic status group [11]. The present study has shown similar findings, in which patients with a high standard of living had a more appropriate knowledge in relation to the oral health care.

Blinder [3] did a study for the evaluation of postoperative instruction compliance among patients who had undergone oral surgery. Academic level in relation to postoperative instruction regarding mouthwash compliance implied a difference while other instructions showed no difference between educated and non-educated patients. This suggests that education is unrelated to the level of understanding, which agrees with Alexander and Taylor EM et al [9]. The present study also illustrates no association of education related to the level of understanding.

Samra Faheem had done study on patient compliance of instruction by performing clinical examination of socket status after non-surgical permanent tooth extraction. Socket cleanliness, socket blood clot status and symptoms of infection like: Swelling redness and fever were to evaluate whether the patient's adherence to instructions was satisfactory or not. Statically there was no significant difference between age, gender with socket status with predilection of the female of poor socket hygiene status [12]. The present study illustrates no statistically significant difference in patient compliance of instructions

with gender, but a statistically significant difference can be observed regarding age groups and socioeconomic groups. Compared with 'non-poor', individuals with low waivers have been appeared to hold different states of mind about medicinal services, indicating a more negative view of medical consideration and lower expectations to seek healthcare [5].

There is a general suspicion that individuals in later life have poorer data reviews than more youthful persons [13]. Others have proposed that it isn't the association of the collected material that is significant in age-related memory function. However, it is the degree to which the data is reliable and related to recently acquired information [14].

There is surely proof for this, it has been discovered that among older readers, therapeutic data that coincided with patients' beliefs was preferred recalled over data negating them. Aging causes trouble in memorizing and thusly recalling post-operative instructions, particularly that which negates previous beliefs. Memory likewise blurs more quickly [15]. The form or mode of information is also relevant. In most cases, providing spoken advice isn't a successful way of retaining post-operative instructions [16]. Hence, we can observe a significant association with the age groups and post-operative instructions, in which the older age groups have difficulty in answering the questions accurately.

Written instructions were better recalled and prompt better treatment adherence [5]. Patients with poor education profited more from the animation technique than did educate patients [11]. Others have used pictographs, pictures, writing in cancer and HIV/AIDS patients. Basic pictographs, with a reasonable and direct connection between the image and its significance, are best [14].

Prescription instructions sometimes tend to be hard to be fully understood; patients often unintentionally forget to take the right amount prescribed by physicians [17]. Alexander reviewed default post-operative instructions usually used in dentistry. He discovered that such used words are full of advanced terminologies and difficult jargons [8]. It has been assumed that simplified written materials can make instructions understandable to the greatest number of patients [18].

By conveying postoperative guidelines, the risk of law claims after surgeries is indeed reduced [2,3,9-15]. Summing the required information to 3 or 4 points during each discussion and using simple terms especially when explaining the diagnosis and giving instructions can assist in patient understanding [19]. A single study suggested that patients who have a good knowledge of their disease or procedure have a better outcome than those who don't [17].

According to the study conducted by Chhabra KG et al [19], the knowledge of post-extraction instructions on oral health-related quality of life among adults was pursued less in a low socioeconomic level due to lack of awareness toward oral health and lack of dental visit.

According to the study Goyal et al [20] on the importance of behavioural sciences within less privileged areas, the services should be provided on the basis of felt needs of the rural population so that appropriate utilization of oral health services can be increased, thereby improving the oral health status of the underprivileged population. By such exploration, post-operative dental pain can also be reduced to a certain extent.

5. CONCLUSION

It was concluded that female and above middle age group and more qualified patients had more post-extraction preventive knowledge and they also followed the instructions very strictly. This study shows the importance of post-extraction knowledge for the patient to prevent the post-extraction complications.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT AND ETHICAL APPROVAL

Before conducting the study, ethical clearance was obtained from the institutional review board. Written consent to participate in the study was

obtained from the patients after explaining the nature and objectives of the study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Brigitta B, Kurt HL. "Solid organ transplantation: are there predictors for posttransplant noncompliance? A literature overview." *Transplantation*. 2000; 711-16.
2. Danielle B et al. "Patient compliance to instructions after oral surgical procedures." *International Journal of Oral and Maxillofacial Surgery*. 2001;8:216-19.
3. Vallerand WP, Vallerand AH, Heft M. "The effects of postoperative preparatory information on the clinical course following third molar extraction." *Journal of Oral and Maxillofacial Surgery*. 1994;1165-70.
4. Adebayo ET, Dairo M. "Patients compliance with instructions after oral surgery in Nigeria." *Journal of Community Medicine and Primary Health Care*. 2005;17(1): 38-44.
5. Curbow B. "Health care and the poor: Psychological implications of restrictive policies." *Health Psychology*. 1986;5.4:375-78
6. Mcguire LC. "Remembering what the doctor said: organization and adults' memory for medical information." *Experimental aging Research*. 1996;22.4:403-28.
7. Elizabeth DC, Cook TD. "Clinical and costsaving effects of psychoeducational interventions with surgical patients: A Metaanalysis." *Research in Nursing & Health*. 1986;9.2:89-05.
8. Roger AE. "Patient understanding of postsurgical instruction forms." *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology*. 1999; 87.2:153-58.
9. Vaughn CL et al. "Consumer preferences for verbal and written medication information." 1988;3:390-96.
10. Rick ZS. "The dental appointment and patient behaviour. Differences in patient and practitioner preferences, patient satisfaction, and adherence." *Medical care*. 1988;26.4:403-14.
11. Keogh T, Gerard JL. "Knowledge, attitudes and behaviour in relation to dental health

- of adults in Belfast, Northern Ireland." Community dentistry and oral epidemiology.1991;19.5:246-48.
12. Faheem S. "Patients Compliance and Follow-Up Rate after Tooth Extraction." 2017; 15:115-20
 13. Ng Sam KS, Chau AWL, Keung Leung W. "The effect of preoperative information in relieving anxiety in oral surgery patients." Community dentistry and oral epidemiology. 2004;32.3: 227-35
 14. Taylor EM, Ramsay MP, Bunton L. "Do our patients understand? A comparison of understanding in adult inpatients and schoolchildren." The New Zealand medical journal 1998;111.1078: 449-51.
 15. Christine HK et al. "The relationship of cigarette smoking to postoperative complications from dental extractions among female inmates." Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology2007;104.6: 757-62.
 16. Trisha K, and Linden GJ. "Knowledge, attitudes and behaviour in relation to dental health of adults in Belfast, Northern Ireland." Community Dentistry and oral Epidemiology. 1991;19.5:246-248.
 17. Peter SA et al. "Psychosocial evaluation and prediction of compliance problems and morbidity after heart transplantation." Transplantation. 199;560. 12:1462-66.
 18. Peter BG et al. "A multicenter study of noncompliance with continuous ambulatory peritoneal dialysis exchanges in US and Canadian patients." American Journal of Kidney Diseases. 2000;35.3: 506-14.
 19. Goyal A, Sharma A, Gaur T, Singh J, Pachori Y, Chhabra KG, Chhabra C. Impact of dental fear on oral health-related quality of life among school going and non-school going children in Udaipur city: A cross-sectional study. Contemporary clinical dentistry. 2014; 5(1): 42–48.
 20. Goyal A, Sharma A, Agarwal S, Bhansali S, Chhabra KG, Chhabra C. Determinants of Tobacco Use among Children of a Rural Village in India: An Exploratory Qualitative Study. Asian Pacific Journal of Cancer Prevention. 2020;21(1):81-86.

© 2021 Ramalingam et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/78555>