

Effectiveness of understanding the post-operative instructions with respect to extraction of teeth in rural population through verbal, written and audio-visual aids.

Akshaya.N ¹, Dr.Sri Harini P ², Dr. Balamanikandasrinivasan Chandrasekaran ³

ABSTRACT

Aim: To compare the efficacy between verbal, written & audio-visual modes of communication in relation to post-operative instructions after extraction of teeth. **Materials & Methods:** Ninety patients were equally divided into three groups. Group 1 were given verbal instructions, Group 2 in written format and Group 3- Audio visual mode. Their responses were recorded using a standard questionnaire after 24 hours of extraction and subjected to statistical analysis. **Results:** Significant differences ($p < 0.05$) was found when the responses were compared between Group 1 and Group 3 and Group 2 and Group 3. **Conclusion:** Patients who received post-operative instructions through audio-visual mode (Group 3) had more understanding when compared to other groups. Incorporation of technology in communication has to be encouraged as it helps for better understanding.

Keywords

Extraction, Post Op instructions, Verbal instructions, written instructions, Audio-visual aids.

within the normal period of time^{2,3}. Following postoperative instructions have a significant influence on healing of extraction socket^{4,5}. It needs appropriate understanding of information by the patients. It is not sure that, the post operative instructions conveyed by the dentist is perceived in the same manner by the patients. Most of the time, it's assumed that patients understood the post-operative instructions without having cross check in relation to the above.

Communication plays the key role in understanding. As the adage says "The biggest communication problem is - we don't listen to understand, we listen to reply back". The degree

1. Final Year, Vinayaka Mission's Sankarachariyar Dental College. Vinayaka Mission's Research Foundation (Deemed to be University). Ariyanur, Salem.
2. Intern, Vinayaka Mission's Sankarachariyar Dental College. Vinayaka Mission's Research Foundation (Deemed to be University), Ariyanur, Salem.
3. Associate Professor, Department of Oral Maxillofacial Surgery, Vinayaka Mission's Sankarachariyar Dental College. Vinayaka Mission's Research Foundation (Deemed to be University). Ariyanur, Salem.

Correspondence:

Dr. Balamanikandasrinivasan Chandrasekaran, Associate Professor, Department of Oral Maxillofacial Surgery, Vinayaka Mission's Sankarachariyar Dental College. Vinayaka Mission's Research Foundation (Deemed to be University). Ariyanur, Salem. Email: drbalamanikandasrinivasan@ymsdc.edu.in, Orchid ID:0000-0001-7756-9113 Cell Phone: +918668197369.

of understanding is directly proportional to the mode of communication given by the dentist. Different modes of communication is possible nowadays because of technological advances.

Multiple studies have been intended regarding dispersal of postoperative instructions after extraction of teeth^{1,2,4,6-9}. The methodology employed in delivering post-op instructions after extraction of teeth plays an important role in reducing the post-operative complications and its associated morbidity¹⁰. Most commonly, verbal mode of instructions is still followed in many places^{4,6-7}. Other methods of instructions given through modern technology using apps have been also employed^{8,10}. The merits and demerits of these methods also been discussed in the literature. But the efficacy of these three different modes have not been compared.

Therefore this study aim to compare the efficacy between verbal, written & audiovisual modes of communication in relation to post-operative instructions after extraction of teeth. The Null hypothesis of this study is that, there is no difference between verbal, written and AV modes of communication with respect to deliverance of post op instructions.

Materials and Methods

This prospective study was conducted in Department of Oral & Maxillofacial Surgery from July-August 2022 after getting approval from Institutional Ethics Committee (Approval No: 254). Total sample was 90 and was equally divided between three groups-Group 1, Group 2, Group 3.

Inclusion Criteria-

Patients who are undergoing extraction of teeth for the first time within the age limit of 20-50 years and healthy patients or patients with mild systemic disease as per ASA (American Society of Anaesthesiologist) - 1 and 2 were included in the study.

Exclusion Criteria-

Patients who doesn't know to read (excluded only in Group 2), mentally retarded patients, patients reporting from urban area and those teeth indicated for surgical

removal were excluded from the study.

The standardized post-op instructions was given to the patients after the extraction verbally in Group 1, in a written format in Group 2 and through A-V method in Group 3. After 24 hours of extraction, a telephonic interview was conducted in patient's native language to all the patients with respect to post op instructions with the help of a questionnaire. (Annexure-1) The questionnaire had totally ten questions. The responses of the patient were recorded for the first nine questions. The 10th question was asked to know their percentage of understanding with respect to the mode of delivery of post op instructions.

Statistical analysis and methods:

The data was subjected to statistical analysis through Kruskal wallis and Mann-Whitney test. The compliance of patients in relation to effective mode of communication was assessed after the completion of the study. The level of significance was set as $p < 0.05$.

RESULTS

Responses of 90 participants who were willing to participate in the study were tabulated after obtaining informed consent. There were 41 males (45%) and 49 females (55%) in the study. In terms of literacy, majority were educated 53 (59%) and can read both English and Tamil and 37 participants (31%) who didn't have any formal education were taken up in either Group 1(Verbal) or Group-3 (AV mode) and the instructions were given in Native language.

The data obtained was tabulated in Microsoft Excel spreadsheet. Data was subjected to normality test and was found to be not-normally distributed. Hence, descriptive statistics was presented as Median score with IQR and inferential statistics using non-parametric test. (Table 1)

The median comprehension score for group 1 was 9.5 ± 3 , while it was 10 ± 2 for group 2 and 12 ± 2 for group 3. This difference was found to be statistically significant. ($p < 0.001$) Post hoc analysis using Mann Whitney test showed that the difference between group

1 and group 3 as well as between group 2 and group 3 were statistically significant. ($p < 0.001$) (Table 2) However, when compared with respect to gender and educational status the differences were not statistically significant. (Table 3 and 4)

Table 1: Median and Interquartile Range of Groups

Group	Median	IQR	p value	Inference
1.00	9.50	3.00	<0.001*	Significant
2.00	10.00	2.00		
3.00	12.00	2.00		

* $p < 0.05$

Table 2 : Comparison between Groups

Group 1 vs 2	0.16	Not Significant
Group 1 vs 3	<0.001*	Significant
Group 2 vs 3	<0.001*	Significant

* $p < 0.05$

Table 3: Comparison with respect to Gender

Gender	Mean score	Std. Deviation	Median	IQR	p value	Inference
1 (n = 41)	10.51	1.70	11.00	3.00	0.64	Not Significant
2 (n = 49)	10.63	1.91	11.00	2.50		

* $p < 0.05$

Educational status	Mean score	Std. Deviation	Median	IQR	p value	Inference
Yes (n = 53)	10.62	1.81	11.00	2.50	0.77	Not Significant
No (n = 37)	10.51	1.84	11.00	3.00		

* $p < 0.05$

DISCUSSION

The first 24 hours after extraction is crucial in healing phase of extraction socket as most of the complications occur in this period. Following post op instructions in this period plays a vital role in preventing adverse effects¹¹. Therefore, it was decided to conduct telephonic interview after 24 hours of extraction. Only traditional methods of delivering post operative instructions have been compared in literature but not with Audio-Visual aids^{4,6-8}. Audio visual aids have become an inseparable part of our life and its usage has been incorporated in educational system also. This study had compared the

understanding of post op instructions between verbal, written and AV mode.

When compared between groups, our results showed that the understanding was more in patients who received instructions through AV mode (Group 3) than other groups thus rejecting our null hypothesis. This is because when the participants see the post op instructions in the form of visuals, graphics and pictures combined with the voice in their native language, their understanding becomes clearer. The results of this study is similar to the randomized control trial done by Ana Mladenovski et al. in which their participants preferred multimedia format when compared to leaflets¹². But the difference is, their study aimed to present information regarding third molar impaction before intervention whereas in this study it is about delivering post op instructions after extraction of teeth.

Participants who got instructions in the written format (Group 2) ranked second in terms of understanding. This is due to the fact that participants were asked to read the given instructions in their native language after extraction which helped them to understand the contents in a better way. Another group of participants (Group 1) who had the chance of only hearing the instructions through verbal tone had less understanding when compared to other two groups.

After 24 hours of extraction, responses were recorded through telephone on and a small discussion was done with all the patients. This is to appreciate them for their right answers and also correct them in case if they gave wrong answer for a particular question. Therefore, the telephonic interview was not meant only for the study purpose but also helped to educate them.

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Annexure-1

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RECORDING OF TELEPHONIC RESPONSES (After 24 hours of extraction)

Name: _____ Age: _____ Gender: _____
OP No: _____

Education status: Educated / Uneducated If educated

- School
 - Diploma
 - Under graduate level
 - Post Graduate level & above Contact number:
- Tooth Extracted: Date of extraction: Date of Interview:
1. When did you remove gauze piece from the extraction site?
 - a) 30 minutes after the extraction
 - b) 1 hour after the extraction
 - c) 10 minutes after the extraction
 2. What type of diet you had after extraction?
 - a) Liquid/Semisolid food
 - b) Solid food
 3. Did you spit the saliva after extraction in these 24 hours?
 - a) Yes
 - b) No
 4. Did you use brush at the site of extraction after 24 hours?
 - a) Yes
 - b) No
 5. When did you rinse your mouth after extraction?
 - a) Immediately after extraction.
 - b) 1 hour after extraction
 - c) 24 hours after extraction
 6. Did you take hot/spicy food within the first 24 hours after extraction?
 - a) Yes
 - b) No
 7. Comment on this statement – Yes/No
Can you stop the medications in the middle of the prescribed days?
 - a) Yes
 - b) No
 - c) Don't know
 8. Comment on this statement – Yes/No
Disturbing the clot by unnecessary movement of tongue

impairs wound healing.

- a) Yes
- b) No

9. Comment on this statement – True or False

Smoking or consuming alcohol should be restricted for at least 24-72 hours after extraction

- a) True
- b) False

10. Rate your level of your understanding with respect to post-operative instructions that was conveyed to you yesterday.

- a) Understood - 100 %
- b) Understood -80 %
- c) Understood -50 %
- d) Understood -30 %

CONCLUSION

Based on the results and discussions above, it can be concluded that:

1. Participants who received instructions through AV mode (Group 3) had more understanding and retention of post op instructions followed by written (Group 2) and verbal mode (Group 1).
2. This implies that integration of technology as a tool has added benefits in terms of educating patients.
3. This study concludes that perceiving post op instructions happened when the participants visualize them than reading and hearing and AV tools should be routinely incorporated in patient management.

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CONFLICT OF INTEREST

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