

Parents' Compliance With Post-Operative Instructions Following The Extraction Of Primary Teeth In Children.

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Abstract:

Background: Adequate parent education (instructions) given after the extraction of primary teeth has been demonstrated to decrease the postoperative experiences, thus improving patient satisfaction. The objective of the trial was to evaluate the parent's compliance with post-operative instructions given in verbal, written formats, and patients' satisfaction with the treatment procedure.

Methodology: A total of 60 children advised for extraction of primary teeth were divided into three groups based on the form of instructions provided to them. **Group A (20):** Instructions verbally, **Group B (20):** Instructions in written form and **Group C (20):** Instructions in verbal and written form. Instructions were given to the parents of all the included children in the study. Three days postoperatively, information was collected based on the parent's memory of post-operative instructions.

Results: A higher percentage of recall was observed in group C (90%) who received both verbal and written instructions followed by group B (70%) and group A (55%).

Conclusion: Verbal instructions alone are not sufficient, and should be reinforced with written instructions. Verbal and written instructions, using simple words, with details on post-operative experiences are essential in achieving successful treatment and better compliance.

Key words: Children, Parents Compliance, Post-operative instructions, Primary teeth

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I. Introduction

Dental caries is one of the most common diseases which is recognised as the primary cause of oral pain and tooth loss. Dental caries if identified at initial stages can be arrested or reversed through various therapeutic and preventive measures. If the lesion has progressed into pulp and the tooth can be restored, pulp therapy is the treatment of choice or if the tooth cannot be restored, extraction of the tooth is the final option.

A recent report shows that the number of tooth extractions carried out in children is on the rise. Premature loss of teeth, a common problem, is defined as "the loss of a primary tooth before the time of its natural exfoliation". Evidence suggests that dental diseases such as caries, orthodontic extractions, mobility, over retention and trauma remain the primary causes for the early loss of teeth in children. The quality of life and food intake of a person is often affected with the loss of teeth. Thus, the tooth loss may be considered a good indicator of the oral health status of an individual or community.

In developing countries such as India, access to oral health services is limited, and diseased teeth are most often left untreated or extracted. In most cases healing of extraction sockets following routine intra-alveolar dental extraction is uneventful¹. Factors implicated in the disturbance of extraction wound include trans-operative complications, the presence of local infection, and bacterial contamination of the socket, experience of the operator and use of a local anaesthetic agent with vasoconstrictor. However, proper healing may be disturbed even in normal healthy individuals for various reasons¹.

Minor oral surgical procedures are stressful events for children before, during and after treatment. Before the surgical procedure, sedatives have been recommended to decrease stress and anxiety, and efficient

local anaesthesia is required during the surgical procedure². Postoperatively, the control of pain, stress and anxiety depends on the patient's emotional and psychological state, the surgeon's explanations, and the relationship between surgeon and patient and pain relief medications.

The postoperative period is influenced by the understanding of the instructions presented by the professional to minimise complications and improving the quality of life of the patient³. Efficient communication between doctor and patient increases the level of understanding and therefore delivering the health care services. Adequate education given after oral surgical procedures has been demonstrated to improve patient satisfaction and decrease postoperative morbidity^{2, 4}. Such education includes the prediction of postoperative events, medication instructions and advice on home care of surgical wounds⁵.

Postoperative instructions can be given in oral and/ or written forms. Generally, verbal instructions are neither understood nor retained well after surgery⁶. Less attention has been given to the mode of transmission of postoperative instructions from the dentist to the parent, and how they understand instructions and applies them correctly². There are few studies, where patient compliance was observed postoperatively after various major surgical procedures, parent's compliance for their children undergoing different surgeries in medicine and also in dentistry for a third molar extraction. But there are no studies reported in the literature about parents' compliance with postoperative instructions following the removal of primary teeth in children. Hence, the present study was planned to assess the parents' compliance with postoperative instructions given in different forms following the extraction of primary teeth in children.

II. Methodology

This study was a randomised clinical trial, consisted of parents of children who underwent dental extractions at the outpatient Department of Paedodontics and Preventive Dentistry, Narayana Dental College and Hospital, Nellore, after obtaining permission from the institutional Ethical Committee.

A total of 60 children (4 - 8 years) advised for extraction of primary teeth and the parents of children who completed at least primary education were recruited in the study. All procedures were performed after the administration of local anaesthesia (2% lidocaine with 1: 80,000 adrenalin). One qualified dental surgeon performed all the dental extractions. The total number of participants were divided into three groups based on the form of instructions provided to them. Group A (20) - Instructions delivered verbally, Group B (20) - Instructions delivered in a written format and Group C (20) - Instructions delivered both in verbal and written form. Instructions were given to parents of all the included children.

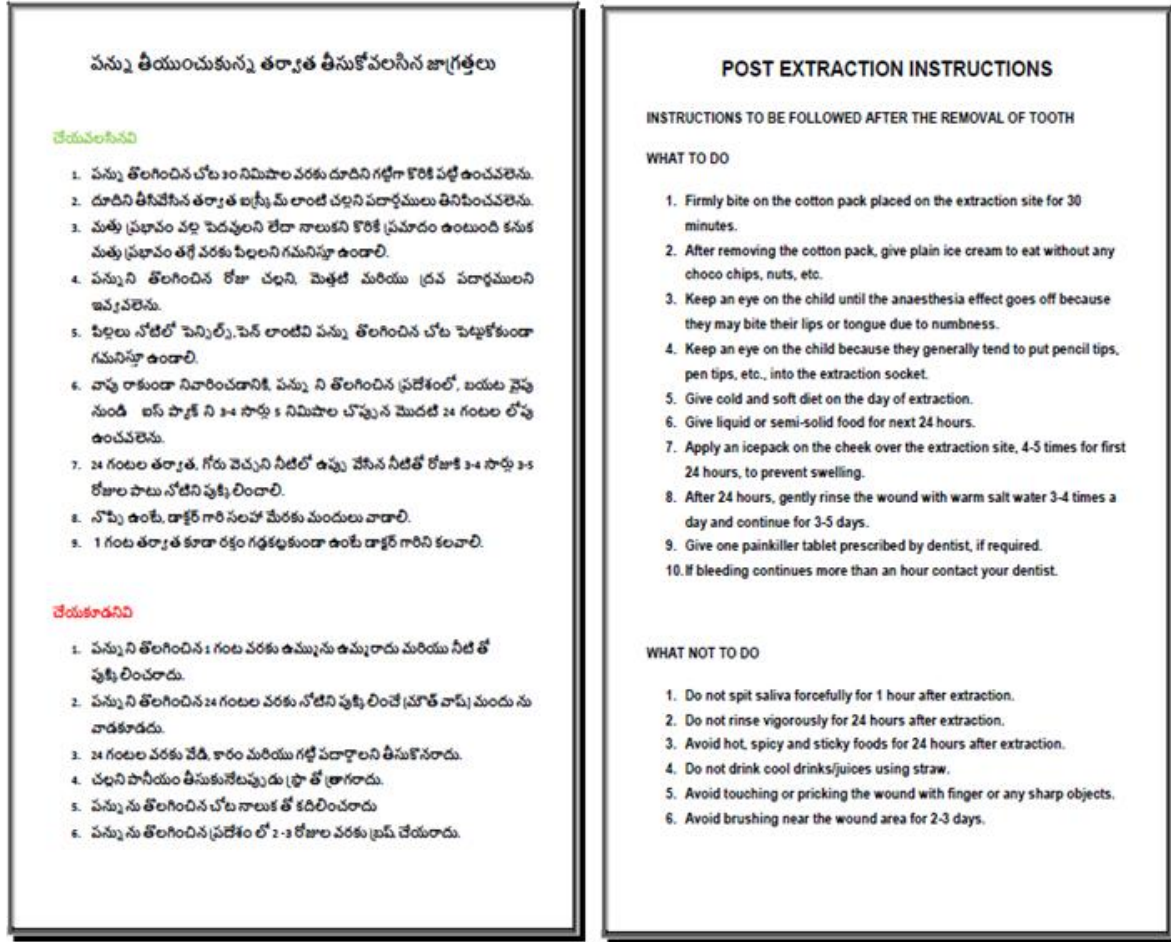
The verbal instructions were a direct version of the written form (Figure 1) read to the parent for 10-15 minutes after the extraction procedure by a dental surgeon in English language or if necessary in the local language.

Postoperative analgesic (paracetamol 8 hourly) was given for three days for all children. Three days postoperatively, information was collected on parents' memory of post-operative instructions, post-extraction experiences and patients' satisfaction in the recall appointment. Compliance with postoperative instructions was evaluated based on questions regarding the type of next meal after oral surgery, warm salt water rinse, how saliva in the mouth was disposed of within 24 hours of extraction and compliance with the analgesic prescription. Postoperative experiences such as jaw swelling, pain, oral bleeding and others were also recorded while patient satisfaction was determined as yes or no.

The collected data were analysed statistically with the chi-square test to compare the three groups ($P \leq 0.05$).

III. Results

FIGURE-1: Instructions given after extraction in native and English language



All the parents of children (60) who participated in the study were reviewed after three days of receiving any of the three forms of post-operative instructions (Figure 1).

CHARACTERISTICS	GROUP A	GROUP B	GROUP C	P VALUE
No. of participants	20	20	20	
Sex (% of total)				
Males	5(25%)	9(45%)	10 (50%)	0.2
Females	15(75%)	11(55%)	10(50%)	
Age range (% of total)				
Parents: 20 - 30 years	6(30%)	4(20%)	6(30%)	0.701
31 - 40 years	11(55%)	15(75%)	12(60%)	
41 - 45 years	2(10%)	1(5%)	1(5%)	
Guardian: 60 - 72 years	1(5%)	0	1(5%)	
Educational status				
No formal education	0	0	0	0.162
Primary education	5	0	1	
Secondary education	7	3	7	
Post- secondary	5	11	7	
Graduation	2	6	5	

TABLE 1: Socio-demographic profiles of parents/guardian

The age range of parents/guardian in group A was 26-60 years with a mean of 34.8 years (SD ±8.10), while that of group B was 28 to 41 years with a mean of 33.2 years (SD ±3.3) and group C was 24-72 years with a mean of 34.4 years (SD ±9.8). There were slightly higher number of females than males in the overall study sample. (Table 1).

TABLE 2: Compliance of parents to instructions.

Characteristics (%)	GROUP A	GROUP B	GROUP C	P VALUE
Remembered instructions as given	11 (55%)	14 (70%)	18 (90%)	0.0569
Did not comply with dietary advise	6(30%)	3(15%)	1(5%)	0.7279
Did not Swallow saliva as instructed	7(35%)	4(20%)	2(10%)	0.5684
Comply with warm salt water rinse	13(65%)	16(80%)	18(90%)	0.9712
Did not comply with analgesic prescription	4(20%)	5(25%)	1(5%)	0.7881
Post-operative experiences				
a. Pain	7(35%)	4(20%)	3(15%)	0.7807
b. Swelling	4(20%)	3(15%)	1(10%)	0.7659
c. Bleeding	3(10%)	2(10%)	2(10%)	0.9073
d. Nothing	6(35%)	11(55%)	14(70%)	0.8015
Satisfied with treatment	14(70%)	16(80%)	19(95%)	0.9752

P- value: significance set at < 0.05.

Remembered instructions as given: A higher percentage of recall of instructions was observed in group C (90%) who received both verbal and written instructions followed by group B (70%) and group A (55%) and the results were statistically significant among the groups (Table 2).

Compliance to warm salt water rinse: There was better compliance among group C (90%) with instructions on commencement of use of warm salt water rinse when compared to group B (80%) and group A (65%).

Did not comply with dietary advice: Children who did not follow the dietary instructions as given was observed low in group C (5%), followed by group B (15%) and group A (30%).

Did not swallow saliva as instructed: Children who did not swallow saliva as instructed was observed less in group C (10%) when compared to group B (20%) and group C (35%).

Postoperative experiences: The standard postoperative experience observed was the pain (35% in group A, 20% in group B and 15% in group C) followed by swelling and bleeding in this study population. However, the differences were not statistically significant.

Level of satisfaction with treatment: Patients in group C had a higher level of satisfaction with treatment (95%) than those in group B (80%) and group A (70%).

IV. Discussion

Bunzel and Lederach-Hofmann stated that compliance is the generally accepted term for patient co-operation with clinical prescriptions, which is vital for therapeutic success⁷. Few studies in the medical, pharmaceutical and nursing literature showed that non-compliance or poor compliance is one of the utmost drawbacks in health care resulting in a waste of resources and funds⁷.

In dentistry, studies of patient compliance are rather few and worried about design problems. Alexander complained about the lack of reports on the effectiveness of postoperative instructions in dental practice⁸. Later, he reported that most of the prescriptions in the US are written at higher than the intellectual level of understanding by many patients, contained multiple grammatical errors and had excessive jargon and hence, they were difficult to read and understand by the ordinary patient⁹.

While bleeding is the most potentially postoperative severe complication, pain at home is often the most significant challenge experienced by the parents of the children. In addition to the discomfort itself, inadequate pain control can lead to decreased nutritional intake and increased rates of secondary haemorrhage.

In the present study, three groups of parents of children were interviewed after three days of the postoperative period. The higher quality of remembrance of instructions was observed in group C (90%) who had received both verbal and written instructions compared to group B, received only written form of instructions and group A, given only verbal instructions. The reason could be due to the personal touch involved in the delivery and the fact that for some parents, verbal instructions were also delivered in their native language if necessary. This further emphasises the operator-parent interaction.

Similarly, Culbertson et al., reported that more than half of the patients in their study preferred both, verbal and written information, about the medication prescribed to them¹⁰. Vallerand et al., reported that both oral and written postoperative instructions given by the dental surgeon after third molar extraction improved the compliance of the patients⁴. Houts et al., stated that patients remembered only 14% of the information when given verbally, compared to 80% when combined with pictograms, while some authors found that verbal instructions alone were ineffective¹¹.

Regarding compliance to use of warm salt water rinse, there was no significant difference found among the three groups, but better agreement was observed in group C (90%) who received both verbal and written instructions, compared to group B (80%) who received only written instructions and group A (65%), only verbal instructions.

In the present study, non-compliance to analgesic prescription was found to be high in group B (25%) who had received only written form of instructions compared to group A (20%) and group C (5%). There is

better compliance with analgesics in group C (95%), and it is possible that compliance is better because of the fear of pain.

Gonzalez and Escoda (2015), reported that pain relief was the leading cause of neglect of anti-inflammatory and antibiotic prescription without differences between gender, age and level of preoperative anxiety, sociocultural level or how to give postoperative information³.

In the present study, the postoperative experiences such as pain, swelling and bleeding were observed and there was no significant differences between the three groups of study population. Among which the most common experience was the pain, observed in group A (35%) who received only verbal instructions, followed by group B (20%) and group C (15%). Swelling and bleeding were observed more in group A followed by group B and group C. Vallerand et al., and Blinder et al., reported that reduction of stress was perceived in the postoperative period when thorough explanations of the post-treatment measures given^{2,4}.

Alexander and Kessel Stated that there were no statistically significant differences in compliance between different population groups about age and educational level in their study^{8,12}. Nevertheless, the relative benefits of verbal or written instructions have not been shown clearly,^{2,6} many researchers, believe that to improve the patient understanding, compliance and treatment outcomes, oral reinforced with written instructions are necessary. The dissemination of postoperative instructions may, also, reduce the risk of litigation after surgical procedures^{2,4,9,10,13}.

Arnet et al., reported that the conviction level of each patient would be improved by a combination of thorough verbal followed by written instructions on therapeutic benefits and dosing of drugs¹⁴. Though several variables could interfere with the adherence to postoperative guidelines, Alexander suggests familiarising the instructions to the needs of each patient (especially about the confines of understanding specific terms and ignorance of the language). This might be due to the fact that a complete and detailed postoperative course and postoperative instructions not only reduces the anxiety that a patient would experience but also encourages compliance to them indirectly⁸.

The level of satisfaction with the treatment was highest in group C (95%) and least in Group A (70%). It was believed that patients with less postoperative complications are more likely to be satisfied with their treatment. In summary, the objective of enhanced patient satisfaction with dental procedures would need reliable use of both behavioural techniques and pharmacological agents to lessen preoperative stress, reduce intra-operative pain, control infection when present and motivate patients and parents to be associated in their post-surgical care.

Improved delivery of verbal instructions together with written format could aid in achieving these goals. Verbal and written instructions, worded simply by the dental surgeon, with details on postoperative experiences are essential in attaining effective treatment.

V. Conclusion

Verbal instructions alone are inadequate, and a written form of instructions is necessary along with verbal instructions. Instructions regarding the postoperative period decrease stress, increase satisfaction and possibly reduce complications. Further studies on the relative benefits of the various forms of operator-parent interaction are necessary to improve the level of satisfaction of patients and to institute relative benefits on numerous types of instructions.

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