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Patient education in orthodontic treatment using audio/visual aids

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Abstract
Objective: To understand what methods to use when explaining the planned treatment and the desired results to patients, which will make them more comfortable and cooperative during the whole length of the procedure.
Materials And Methods: Patients were divided into different groups and they were given verbal and visual (photographs & videos) aids before and during the span of treatment. The behaviour, knowledge and interest level of patients was then observed by doctors and was recorded by handing out different proformas to patients.
Results: A significant amount of difference was found between patients that were verbally explained and those that were shown different pictures and videos to explain how the treatment will take place and pan out. Visual aids (especially videos) were highly acknowledged and appreciated by a high percentage of patients. It also showed increased level of awareness in the relatively uneducated patients.
Conclusions: Study showed the importance of visual aids in explaining treatment and desired results to the patients. This type of communication should be used be maximum number of doctors for patient satisfaction. Posters, pictures and short videos should also be displayed in the waiting areas of hospitals/clinics to educate the patients.

Keywords: orthodontic, planned, procedure, uneducated patients

Introduction

There has been a huge rise in the concept of "patient-centred" care in the past few years. In this area, a patient's expectation plays an important role to his satisfaction on the outcome of the treatment [1, 5]. This becomes even more substantial with long term and aesthetics involving treatment, which is the case with most of the orthodontic treatments [6].

Previously the patients were informed about their case and its treatment options and results verbally. But now due to increased patient awareness and recent advances in technology, a new approach is being observed in doctors to help patients better understand what to expect from and during their treatment using pictures, animations and short videos [2]. These practises are not only being observed during doctor patient interactions but posters, pamphlets [3] and screens are also being seen in the waiting areas of different hospitals and clinics.

The main reason for patient dissatisfaction during an orthodontic treatment is usually his unrealistic expectations from the treatment. Expectation of patients can be managed by showing them computerized procedure and predicted results of their treatment. Visual aids can provide the best source for this purpose.

The purpose of this research is to find whether these new ways help in patient satisfaction [4], if so then how much of difference do visual and verbal aids make for the patient during the whole course of treatment compared to the use of verbal means alone.

Materials and Methods

This study was conducted in the "Orthodontics Department" of KRL (Kahuta research Laboratories) General Hospital Islamabad.

To carry out the research a questionnaire was prepared which had questions about the effects of visual aids on the patient. Other questions included the satisfaction, increase in knowledge, comfort levels, and their comparison was asked between verbal and visual aids. The information was then collected and results were formed. The questionnaire used for this research is given below.

Questionnaire
P. No
Gender
Age

- Did your perception towards treatment improvement with the provision of audio/visual aids.

a. Yes
b. No

- Did you understand your treatment plan better with the help of video clips?

a. Yes
b. No

- Does your understanding and compliance with functional appliance therapy improve with pictorial descriptions?

a. Yes
b. No

- How much improvement in perception towards orthognathic surgical plan was there after seeing the post-surgical profile changes on software?

a. None
b. A little
c. Considerable

- Did the pamphlets help in improving your awareness towards the use of interdental brushes, dental floss, mouth-wash plaque disclosing agents?

a. Yes
b. No

- Did your perception towards orthodontic treatment and compliance improve after getting an in-depth knowledge of orthodontics?

a. Yes
b. No

- Did you understand the concept of retainers provided at the end of ortho treatment in prevention of relapse (recurrence of malocclusion)

a. Yes
b. No

Results

For this research 80 candidates were randomly chosen consisting of 47 females and 33 males. Two groups containing verbal and visual instructions were made and 40 patients were put in each group. None of the patients cancelled their second appointment or got their brackets debonded. The descriptive data of both groups is given in 'Table 1' below.

Table 1

Table 1: The statistics of the samples

Group	Female (%)	Male (%)	Age Range	Aesthethic Chief Complaint	Functional Chief Complaint	P value
Verbal	24(60%)	16(40%)	13-31	29(72.5%)	11(27.5%)	>0.05
Visual	23(57.5%)	17(42.5%)	13-31	26(65%)	14(35%)	
Total	47(58.75%)	33(41.25%)	13-31(22.7 ± 6.1)	55(68.75%)	25(31.25%)	

The results showed increased knowledge of treatment planning and way more compliance in visual aids group than verbal group.

Discussion

To understand the procedure is very important to make an informed decision [7]. The research is focused towards verbal versus computerized visual information towards patients and then scoring them using a questionnaire.

According to a study carried out by Zhang *et al.* mostly the dental appearance and improved function were the top most expectations found in the patients [8, 9]. The background of the patient such as their education and social health systems were the most common factors affecting the patient's expectations [10, 11, 12].

Most of the patients that visit for orthodontic treatment are usually coming to an orthodontist for the first time, so their expectations are usually based of existing knowledge they have or they heard whether it is correct or not. Visual aids used as in this research are very good tool to give patients true information and realistic expectations from the procedure. Similarly Christensen *et al.* saw that most patients have no knowledge about the importance of retainers [13], this situation can also be improved using visual aids which show the importance of using retainers preventing relapse.

Many studies suggest that patients are not satisfied when their expectations were not fulfilled [17]. A very important point mentioned in Zhang's study describes that patient's expectations should be gradually decreased during the course of treatment, and most common cause of unrealistic expectations on quality of life is due to wearing orthodontic appliances [9].

In his research BOS *et al.* observe that most health care professionals agree that maintaining cooperation with patients is very significant in order to make the treatment successful[18.] If patient expectations are not fulfilled there will always be disappointment [19]. A good quality orthodontic treatment is always in relation with the understanding of patient and his compliance with the indications of dentist as shown by Gomes *et al.* in his research work [14, 15, 16].

As it is established that the compliance and understanding of patient is mandatory for their satisfaction, so we need to find the best way to make the patient grasp the fundamentals of the treatment. Sano *et al.* found during their study that patients understand and apply computerized instructions better than the verbal instructions showing the importance of visual aids [20].

Shabiralyani and his partners concluded in their study that visual aids stimulated thinking and improved learning in the subjects [21]. Similarly a research by Garcia-Retamero, Cokely, and others shows that well-designed visual aids can be particularly effective for vulnerable populations, such as older adults, high-risk patients, immigrant populations, and those who have poor numeracy skills and little medical knowledge [22]. In another similar study Savage, Arif and others found that when verbal and visual aids are used together, the patients understood better compared to when they were educated verbally only [23].

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