INFLUENCE OF LITERACY LEVEL ON PRETREATMENT EXPECTATIONS OF PATIENTS SEEKING REMOVABLE DENTURES

1SALMAN AHMAD, FCPS (Prosthodontics)  
2BILAL AHMED, FCPS (Prosthodontics), FFD FRCS I-II (Ireland)  
3WALEED ISHAQ, 3SARA BANO, 3SAROOJ ZAHRA

ABSTRACT

The objective of this study was to find out any association between pretreatment expectations of prosthodontic patients with their literacy level. For this, a cross-sectional survey was carried out on 100 new patients requiring complete or partial dentures. A self-designed close-ended questionnaire, based on nine relevant questions was used. Patients were required to answer as “Yes” or “No.” Afterwards, a numeric calculation was done to derive a final score that ranged from 9 upto 18. This final score was used to categorize the expectations of the patients into five groups i.e. very low (score of 9-10), relatively low (score of 11-12), moderate (score of 13-14), relatively high (score of 15-16), and very high (score of 17-18). Overall, only 3 (3.0%) patients had the ideal very low expectations and both belonged to the literate groups. In contrast, very high expectations were seen in 10 (10.0%) illiterate patients only. Chi-square test revealed significant association of pretreatment expectations with literacy level (P<0.001). It was concluded that patient expectations from removable dentures were highly influenced by their literacy status.

Key Words: Expectations, dentures, pretreatment, literacy, survey.

INTRODUCTION

Understanding the expectations of patients at the start of treatment and their influence on the success of that treatment is considered to be an important predictor of patient satisfaction. Patients tend to expect more from removable prostheses in terms of restoration of a pleasing dento-facial appearance and a functional state. Various demographic, psychological and socioeconomic variables are known to influence these expectations.

Literacy level of the patient can also be an important variable. However, current literature presents differing results. For instance, in their study on complete denture satisfaction, Singh et al found it to be different in different literacy levels but it was generally higher with increasing literacy levels. This was attributed to better understanding of the literates regarding post-insertion instructions and limitations of the denture therapy. Contrary to this finding, study by Celebic et al revealed that patients with a low level of education were more satisfied with their esthetic appearance restored with dentures. Such differing results make it important to investigate the influence of education and literacy status on pretreatment expectations of the patients.

Therefore, the objective of the present study was to find any influence of level of literacy on patient expectations from removable partial or complete dentures. It was hypothesized that literacy level should have no influence on patients’ pretreatment expectations. The gathered information is hoped to provide the local and regional dentists with better understanding about patient demands and may help them in providing better education and instructions towards removable dentures.

METHODOLOGY

It was a cross-sectional survey carried out in the Department of Prosthodontics at Nishtar Institute of Dentistry, Multan, Pakistan from 20th March to 19th July 2013 as a pilot project of an undergraduate
Influence of Literacy Level on Pretreatment expectations

A convenience non-probability consecutive sampling technique was used to recruit one hundred (100) subjects in the study according to the following inclusion criteria: both male and female patients ranging in age from 20 years up to 80 years, and requiring a new removable partial or complete denture (first time denture wearers). Only those patients were excluded who did not give consent to be interviewed, who were mentally handicapped or reported to be on anti-depression therapy. Patients were categorized into 4 equal groups of 25 each according to their level of literacy i.e. Group A (illiterates), Group B (primary to middle education), Group C (secondary to higher secondary education), and Group D (graduation and above).

Suitability of the case for provision of partial or complete denture was judged after history taking, and clinical and radiographic examination. Then informed consent was obtained from the patients before being included in the study and interviewed. For this purpose, a self-designed close-ended questionnaire was used. All data were recorded by three final year students under supervision of a senior staff member.

In order to judge the level of expectations, every patient was asked nine questions, which were explained to them in Urdu language. Questions were asked regarding delivery of denture on the first visit, denture lasting forever, denture fixed in place and never to be removed, denture not needing any adjustments in future, eating of every type of food (hard or soft) with denture, ability to eat anything right after insertion, having whiter than white teeth in denture, not having any difficulty in speaking with the denture, and functioning of the denture to be better than natural dentition. Patients were required to answer either as “Yes” or “No”. Questions were so designed that the best answer was a “No” in every case.

After recording the responses of the patients, a simple numeric calculation was done. Every “Yes” answer was given 2 points (labeled as value 1) while every “No” answer was given 1 point (labeled as value 2). Both values were added up to obtain the final score of the patient. The minimum score that could be achieved was 9 (all answers in “No”) and the maximum 18 (all answers in “Yes”). At the end, the patient’s expectations were categorized into 5 groups on the basis of their final scores: score of 9 or 10 as very low expectations, score of 11 or 12 as relatively low expectations, score of 13 or 14 as moderate expectations, score of 15 or 16 as relatively high expectations, and score of 17 or 18 as very high expectations. It was assumed that the lower the final score of the patient, the more realistic would be their expectations.

Data analysis was done by using the Statistical Package for Social Sciences (SPSS) version 17 software. Mean age and mean score of the study participants was computed along with the standard deviation. In order to generate correlations of the study variables, cross tabulation was done for literacy level and total score obtained, expectations category and also to the responses of individual questions. Chi-square test was applied at 95% confidence interval and P value of less than 0.05 was considered as significant.

RESULTS

The mean age of study sample was 48.01 years and standard deviation was 14.26. Subjects ranged in age from 22 years up to 78 years. There were 43% males and 57% females, with a male to female ratio of 1:1.3. Responses to the nine individual questions revealed interesting results. 37% patients expected to have their dentures delivered on the first visit, 90% expected their dentures to last forever, 13% expected their dentures to be fixed in place, 64% wished their dentures won’t need any adjustments in future, 96% expected to eat any type of food (soft or hard) with their dentures, 75% expected to eat anything immediately after insertion of their dentures, 47% wanted whiter than white teeth in their dentures regardless of their original tooth color, 31% expected their dentures to function better than the natural teeth and 57% expected not to have any difficulty in speech after denture insertion.

The total score, which was calculated numerically, ranged from 9 to 18 with a mean score of 14.10. Only 3 (3.0%) patients obtained the minimum score of 9 as well as the maximum score of 18 whereas maximum number of the participants i.e. 26 (26.0%) scored 15 overall. Table 1 presents a detailed view of patient distribution according to total score obtained.

Patient expectations were categorized into 5 groups according to the final score obtained. This distribution is presented in table 2. Overall 10% patients demonstrated very high expectations who were all illiterates. On the other hand, only 3% patients were in the very low expectations category, all of them belonged to the literate categories.

When Chi-square test was applied to study variables, it returned a highly significant value (P<0.001) for total score obtained as well as the expectation
Influence of Literacy Level on Pretreatment expectations

The present study was carried out on 100 first time denture wearers including 25 patients each in the 4 literacy groups devised i.e. patients who were illiterates (Group A), patients with primary to middle level education (Group B), those with secondary to higher secondary education (Group C), and those with graduation or above level of education (Group D). This drastically simplified the results of the study. Overall, the null hypothesis devised at the start of the study was proved wrong, since patient expectations were highly related to their literacy level.

Study data were collected through patient interviews conducted by three undergraduate students of final year BDS who were properly trained in this matter by the primary author. All information was gathered on a self-designed close-ended questionnaire with the intent to keep the process of information gathering simple and easy to perform repeatedly over the course of the study. Nine different questions were planned, which were explained to the patients in Urdu language so that they understood them clearly. All questions were structured so that the best answer was a “No” for all the items. This was done to standardize the results and outcome of the study.

Patient responses were used to numerically calculate their final scores. This helped in formulating the

categories devised. It also remained highly significant for questions relating to delivery of denture on the first visit (P<0.001), dentures fixed in place (P<0.001), no need for adjustments (P=0.001), ability to eat immediately after insertion (P<0.001), using whiter than white teeth in dentures (P<0.001) and functioning of dentures to be better than natural dentition (P<0.001). A slightly non-significant value was returned for the question on dentures lasting forever (P=0.056). A non-significant association was returned for the questions regarding ability to eat any type of food with dentures (P=0.244) and having no difficulty in speech (P=0.257).

DISCUSSION

The present study was carried out on 100 first time denture wearers including 25 patients each in the 4 literacy groups devised i.e. patients who were illiterates (Group A), patients with primary to middle level education (Group B), those with secondary to higher secondary education (Group C), and those with graduation or above level of education (Group D). This drastically simplified the results of the study. Overall, the null hypothesis devised at the start of the study was proved wrong, since patient expectations were highly related to their literacy level.

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Patient responses were used to numerically calculate their final scores. This helped in formulating the

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<th>9</th>
<th>12</th>
<th>13</th>
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<td>(1.0%)</td>
<td>(2.0%)</td>
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<tr>
<td>Group D</td>
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<td>0 (0.0%)</td>
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<td>12 (12.0%)</td>
<td>0 (0.0%)</td>
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<tr>
<td>Total</td>
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<td>30 (30.0%)</td>
<td>21 (21.0%)</td>
<td>3 (3.0%)</td>
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</table>
five groups of patient expectations whereby a higher score was associated with higher level of expectations and a lower score with lower levels of expectations. Overall, bulk of the patients i.e. 36% demonstrated relatively high expectations from their dentures. A possible reason could be the sample itself, as bias in results could have been due to other influencing factors such as age and gender of the patients. In another study carried out at the same center, it was revealed that unrealistically high expectations were presented in females and middle aged subjects. No effort was done in the present study to control these variables as the aim was only to carry out a survey of the literacy level as a possible predictor of patient expectations. More comparative research is needed in this context to further better our understanding of the factors involved in patient expectations from dentures.

In the study sample, only 10% patients demonstrated very high expectations and interestingly enough all of these were in the illiterate group. None of the literate groups showed such high expectations. On the other end, the ideal very low expectations category was seen in 3.0% patients only who belonging to literate groups B and C. Quite unexpectedly, none of the most educated lot of patients with graduation or above level of education scored in this ideal category. It must have been a chance occurrence only. However, further research with more controlled sampling is needed to establish the role of literacy and possibly other factors that may be influencing the pretreatment expectations of prosthodontic patients in this part of the country.

A study carried out by Diehl et al found no statistically significant relationship of demographic factors and education level with the success of a removable denture. However, they accepted these and other variables as important co-factors for patient’s acceptance and their perceptions of dental therapy outcomes. In a recent study by Singh et al it was found that the literate patients were more self-motivated and aware towards denture therapy for esthetic and functional reasons as compared to the illiterate patients. This resulted in higher satisfaction level of the literate patients. Contrary to this, Celebic et al7 found that patients with a low level of education were more satisfied with their esthetic appearance after denture therapy. Results of the present study have established a strong relationship of patient expectations with their literacy level.

CONCLUSION

Within the limitations of the present study, it can be concluded that the pretreatment expectations of prosthodontic patients are highly influenced by their level of education since illiterates have unrealistically high expectations from removable dentures.

REFERENCES