Original Research Article

Patients' Acceptance of the Treatment Plan Proposed by the Dental Students Training in REU and Factors Associated with the Rejection; A Cross-sectional Study

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Study Aims: To determine the degree of acceptance of a treatment plan by the dental patients in REU clinics. To determine the factors associated with the failure of acceptance of the treatment plan. **Materials and methods:** This is a cross-sectional study, conducted in the clinics of the REU Muneseya campus. A convenient sampling technique was utilized and 500 patients along with 250 dental students took part in this study. 2 surveys were designed using Google forms and participants were asked to fill them by using i-pads and mobile phones. **Results:** A total of 581 participants took part in this study. These include 71% males and 29% females (figure 1). Educational levels were also mentioned with 4% uneducated, 7% primary, 34% high school and 55% graduates participating in this study. 96% patients with appointment reported that they were satisfied with the proposed treatment plan (p-value: 0.000). Majority of the patients understood that they were going to receive treatment from the students (p-value: 0.000). **Conclusion:** Dental patients visiting the REU clinics seem to be highly satisfied with the treatment plan being explained to them. Patients with appointment showed more patience with the dental students as compared with the emergency patients.

Keywords: Treatment plan, Dental students, Dental school.

INTRODUCTION

Dental students are exposed to the clinical setting in their second half of the undergraduate training, which indulges them to perform various procedures on the patients. The first and foremost step in this learning ladder is the presentation of a comprehensive treatment plan. It is a common practice among dental school students to take a relatively long time to provide the desired treatment to the patients. This leads to certain patients deciding on receiving a particular treatment rather than going for the complete list of procedures mentioned in the comprehensive treatment plan. One of the major reasons behind this is the incomplete disclosure of risks and costs associated with those procedures (Hook et al, 2002; Davis & Reisine, 2015).

The undergraduate training in dental schools is not merely focused on skill learning and practice; it is also a matter of successful communication between the students and patients. If this feat is achieved, the confidence and trust-building phenomenon receives a positive push towards the desired end result (Ali et al, 2016; Ryan & Cunningham, 2014). However, there is another factor of 'patient burnout' that is important in determining whether patients are willing to receive and accept a comprehensive treatment plan from the dental students. Several patients, who visit a dental school clinical setup, do not have a high threshold in order to follow the comprehensive treatment plan. Therefore, they end up receiving merely a partial treatment, which is mainly the chief complaint (Bain & Jerome, 2018).

Another important determinant of patients' unwillingness of accepting treatment plans from dental students is their satisfaction levels. This is strongly associated with patients' previous experiences that led to the change in their perception. Therefore, the dental school administration should work hard on the measures taken to improve the quality and satisfaction levels consequently (Ahmady et al, 2015). Apart from the satisfaction level, patients' expectations also play a crucial role in determining the long or short standing relationship with their

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dentist. The frequency of dental school visits is seen to be directly proportional to expectations being met as far as patients are concerned. Long term patients, who receive dental treatment from undergraduate students, have disclosed positive attitudes towards the acceptance of treatment provided to them (White, Slabber & Schreuder, 2001).

Speaking of expectations of patients in a dental school setting, several factors should be kept under consideration, which include waiting time, staff behavior, infection control, explanation about treatment procedures, etc. When these are not met, they lead to a compromised relationship between patients and dental students (Pakkhesal et al, 2016; Sur et al, 2004). Patients' values regarding their choice of a treatment plan should always be respected. This can be achieved if there is successful communication, which leads to trust-building relationship between the patient and dentist. These factors influence the decision making of the patients whether to accept or reject the treatment plan offered by the dentist (Azarpazhooh et al, 2016).

Additionally, monetary factors are also important in convincing the patients to accept the treatment plan offered to them. This is associated with the patients who are either paying cash or using their dental insurance. Apart from these factors, the type of dental treatment and dental practitioner is also important in decision making of patients regarding the acceptance of a treatment plan (Aminoshariae et al, 2014). Since this study is to be conducted in dental school, it is important to make the right choice when offering the treatment plan to the patient. There is a thin line between a complicated root canal treatment and the extraction of that tooth. A thorough consultation should take place before the final treatment plan can be presented to the patient (Aminoshariae et al, 2015).

It is worth noting that this is the first study of its kind that has not been found in any of the databases. Furthermore, no other private university has performed this study previously.

AIMS OF THE STUDY

- To determine the degree of acceptance of treatment plan by the dental patients in REU clinics.
- To determine the factors associated with the failure of acceptance of a treatment plan.
- To compare findings on the basis of educational level and frequency of dental visits.
- To know the students' side of information related to treatment plan disclosure and its chance of acceptance/rejection.

MATERIALS AND METHODS

This is a cross-sectional study, conducted in the clinics of the REU Muneseya campus. A convenient sampling technique was utilized and 500 patients along with 250 dental students took part in this study. 2 surveys were designed using Google forms and participants were asked to fill it by using i-pads and mobile phones. Survey for dental students was constructed in English language; however, the one for patients was translated in Arabic for their ease of response. Survey for patients included questions related to demographics, frequency of visits to REU clinics, the prevalence of treatment plan acceptance and factors associated with it, the overall level of satisfaction, etc. On the other hand, student surveys included their dentistry level, experience of students in their patients

accepting/rejecting the treatment plan, their opinion on the possible reasons behind it, etc.

Inclusion criteria (patients)

- Adults from both gender
- Having at least visited REU clinics once before

Inclusion criteria (students)

- All male and female students from level 9 and above

Informed consent and approval

This study was registered to the research center of REU, with acquiring of Institutional review board's approval for the collection of data in clinics. All participants were asked to sign a consent form before the survey response.

Statistical analysis

The collected data was subjected to statistical analysis using the Statistical Package for Social Sciences (SPSS) version 19. Descriptive as well as inferential statistics was done and displayed using tables and graphs. Comparisons were made between the groups with value of significance kept under 0.05. Chi-square test was conducted in order to compare the results on the basis of their dentistry levels and patients' purpose of a dental visit.

Reliability and validity of questionnaire

We performed the reliability test on SPSS using Chronbach's alpha statistical analysis. The value retrieved was 0.766, which is considered to be adequate for the questionnaire to test on a constant basis. On the other hand, the questionnaire was sent to three professors of Riyadh Elm University in order to check the validity, slight changes were done according to their instructions. The final version of the survey was valid.

RESULTS

The results of this study are divided into two sections, which include the survey response of patients and dental students. As far as the patients are concerned, a total of 581 participants took part in this study. These include 71% males and 29% females (figure 1). Educational levels were also mentioned with 4% uneducated, 7% primary, 34% high school and 55% graduates participating in this study (table 2). As far as patients' socioeconomic status is concerned, 9% belonged to low, 82% to medium and 9% high (figure 3). Dental patients' purpose of a visit was also mentioned, which include emergency (30%) and appointment (70%) (figure 4).

Table 1 shows the comparison of survey responses from patients when asked certain questions on the basis of their purpose of visit. 96% patients with appointment reported that they were satisfied with the proposed treatment plan (p-value: 0.000). Majority of the patients understood that they were going to receive treatment from the students (p-value: 0.000). Patients with appointments had a higher number of previous visits to REU clinics (p-value: 0.005). Remaining survey responses were found to be statistically insignificant, which include students explaining the treatment plan with cost (p-value: 0.226), patients satisfaction from the cost (p-value:

0.318) and patients visiting other dental university hospitals (p-value: 0.218).

The second part of the results includes the students' survey responses and their comparisons. A total of 321 students responded to the survey sent to them. It can be noted from figure 5 that there were 46% female and 54% male students. As far as dentistry levels were concerned, 32% belonged to level 9, 25% to level 10, 22% to level 11 and 21% to level 12 (figure 6). Furthermore, GPA of students was also noted and it was reported that 2% of students had GPA less than 2.5, 21% had 2.5-3.5 and 77% had a GPA of 3.5 to 5.0 (figure 7).

Table 2 shows the comparison of survey responses on the basis of students' dentistry levels. We found a few statistically significant differences among the sub-groups. When inquired about students facing difficulty from the patient in accepting a treatment plan, 75% level 12 students responded with yes as compared to 55% level 9 students (p-value: 0.024). When investigated about the patient ever rejecting the treatment plan, it was observed that the most number of rejections were experienced by level 12 students (62%) as compared to 33% of level 9 students (p-value: 0.001).

However, all other survey questions resulted in comparisons that were not statistically significant. These included facing difficulty in planning and proposing treatment plan (p-value: 0.591), time taken to make a treatment plan (p-value: 0.280), receiving enough training in planning and proposing a treatment plan (p-value: 0.114) and the reasons behind rejection of treatment plan (p-value: 0.363).

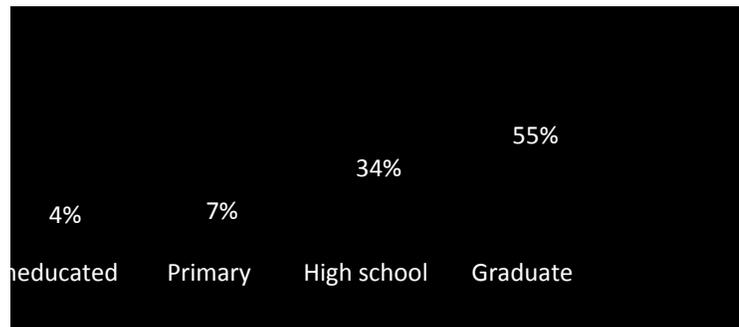**Figure 1: Gender ratio of the PATIENTS taking part in this study**

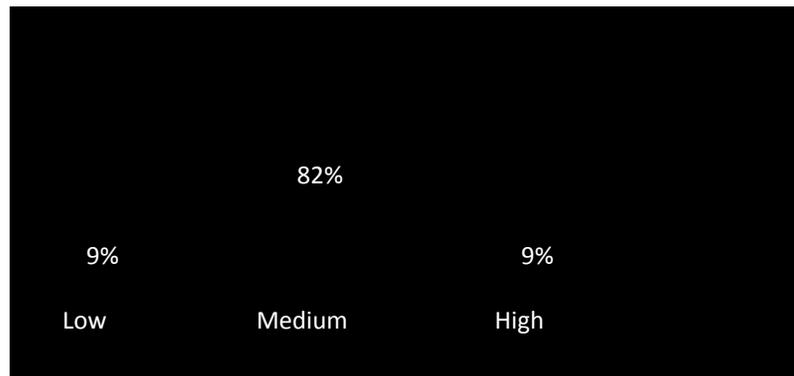**Figure 2: Patients' educational level taking part in this study**

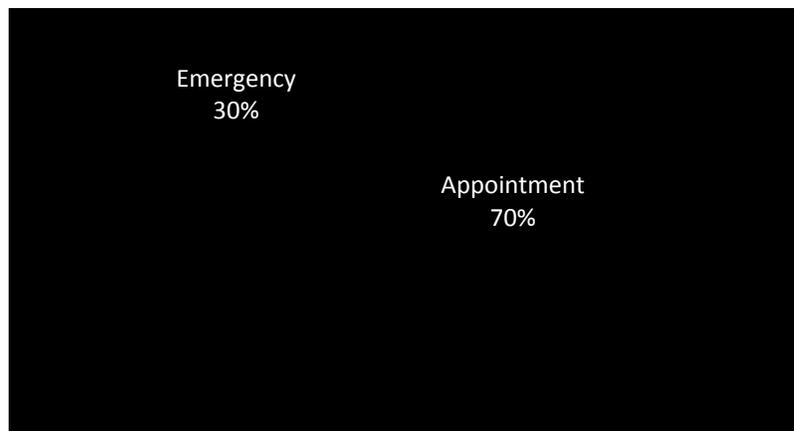**Figure 3: Patients' socioeconomic status taking part in this study**

Figure 4: Patients' purpose of dental visit

Table 1: Comparison of survey response on the basis of dental visit purpose

| Survey Items	Appointment	Emergency	Total	P-value
Student explained the treatment plan with cost?	Yes: 88% No: 12%	Yes: 84% No: 16%	Yes: 87% No: 13%	0.226
Satisfied with the proposed treatment plan?	Yes: 96% No: 4%	Yes: 85% No: 15%	Yes: 94% No: 6%	0.000
Aware of dental student's level?	Yes: 74% No: 26%	Yes: 55% No: 45%	Yes: 70% No: 30%	0.000
Number of previous visits to REU?	1-2 visits: 24% 3-5 visits: 36% 5+ visits: 40%	1-2 visits: 40% 3-5 visits: 28% 5+ visits: 32%	1-2 visits: 27% 3-5 visits: 35% 5+ visits: 39%	0.005
Satisfied with treatment cost?	Yes: 93% No: 7%	Yes: 91% No: 9%	Yes: 93% No: 7%	0.318
Visited any other dental university hospital?	Yes: 24% No: 76%	Yes: 29% No: 71%	Yes: 25% No: 75%	0.218
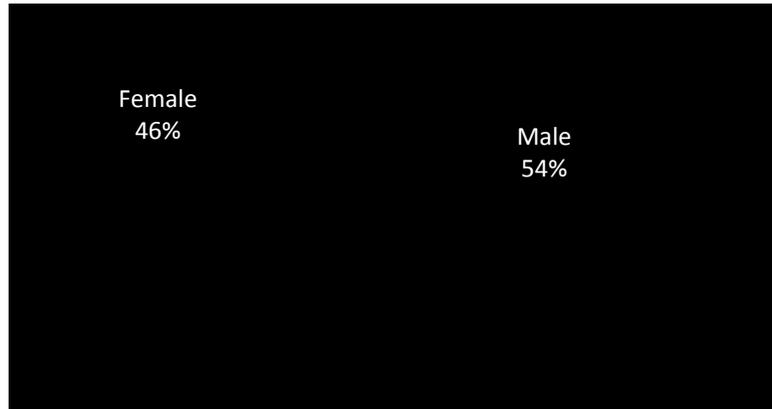
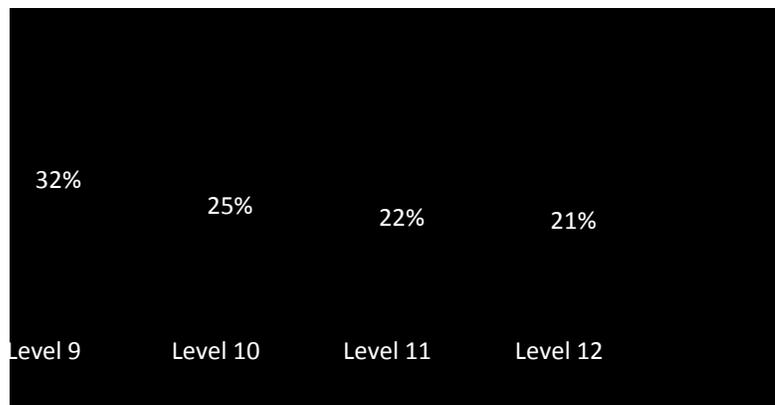**Figure 5: Students' gender ratio taking part in this study**

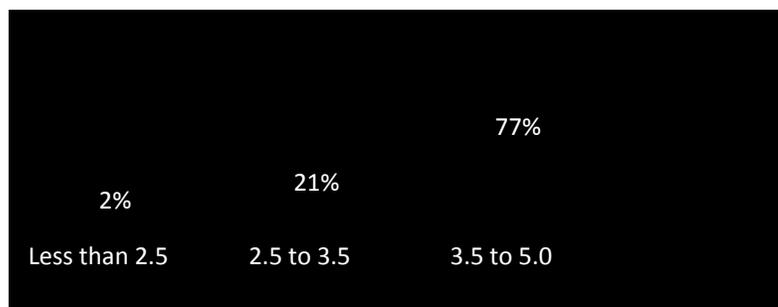**Figure 6: Students' dentistry level distribution**

Figure 7: GPA distribution of students taking part in the study

Table 2: Survey questions comparison on the basis of dental students' level

Survey Items	Level 9	Level 10	Level 11	Level 12	Total	P-value
Faced difficulty in planning and proposing treatment plan?	Yes: 47% No: 53%	Yes: 56% No: 44%	Yes: 55% No: 45%	Yes: 54% No: 46%	Yes: 53% No: 47%	0.591
Faced difficulty from the patient in accepting treatment plan?	Yes: 55% No: 45%	Yes: 63% No: 37%	Yes: 72% No: 28%	Yes: 75% No: 25%	Yes: 65% No: 35%	0.024
Time taken to make a treatment plan	<30 min: 74% 1 hr: 25% >1 hr: 1%	<30 min: 73% 1 hr: 20% >1 hr: 7%	<30 min: 74% 1 hr: 23% >1 hr: 3%	<30 min: 65% 1 hr: 29% >1 hr: 6%	<30 min: 71% 1 hr: 24% >1 hr: 5%	0.280
Received enough training in planning and proposing a treatment plan?	Yes: 64% No: 36%	Yes: 75% No: 25%	Yes: 80% No: 20%	Yes: 74% No: 26%	Yes: 71% No: 29%	0.114
Has any patient rejected your treatment plan?	Yes: 33% No: 67%	Yes: 48% No: 52%	Yes: 57% No: 43%	Yes: 62% No: 38%	Yes: 48% No: 52%	0.001
If yes, What was the reason?	Patient was in a hurry: 29% Patient wanted only emergency treatment: 54% Patient did not trust me: 9% Price was not suitable for patient: 7%	Patient was in a hurry: 27% Patient wanted only emergency treatment: 47% Patient did not trust me: 11% Price was not suitable for patient: 14%	Patient was in a hurry: 31% Patient wanted only emergency treatment: 49% Patient did not trust me: 14% Price was not suitable for patient: 6%	Patient was in a hurry: 22% Patient wanted only emergency treatment: 45% Patient did not trust me: 10% Price was not suitable for patient: 24%	Patient was in a hurry: 27% Patient wanted only emergency treatment: 50% Patient did not trust me: 11% Price was not suitable for patient: 13%	0.363

DISCUSSION

This study was aimed to determine the experience of rejection of treatment plans by the patients as well as the factors associated with it. As mentioned above, this study has been divided into two segments, which include the patients' survey as well as the dental students' survey. Dental patients usually visit the REU clinics through appointments, whereas some patients come with a dental emergency. It is important to understand the difference in these two types of patients especially in relation to our study title. Patients with appointments are expected to accept and commit to the treatment plan presented to them as compared to the patients visiting the clinics due to emergency (Anderson, 2004). Our results from table 1 suggest similar information.

Dental treatment comes with a great deal of satisfaction need and the quality of the dentist/patient relationship. Our findings suggest that the patients were highly satisfied with the treatment plan offered to them. However, studies from other countries suggest that the satisfaction levels of dental patients visiting university hospital clinics vary. Their anxiety levels also differ as most of the patients do not trust the skills of dental students (Pekkan, Kilicoglu & Hatipoglu, 2011).

It can also be noted from the results that as the students' moved towards a higher dentistry level, the chances of rejection of treatment plan also increased. There might be a few reasons behind this, which include the increased exposure of dental patients to final year students and decreased motivational levels when students move from lower levels to higher levels. Similar findings were revealed by Gorter et al

(2008), which revealed a negative development of students through their journey from first to the final year of dentistry.

There is a scope of expanding the parameters of this study if we could gain access to other dental university hospitals and gather more data. The participation of more students from other universities could give us a much more generalized point of view regarding this important issue that is faced by students who face a challenge to complete their clinical requirements.

CONCLUSIONS

- Dental patients visiting the REU clinics seem to be highly satisfied with the treatment plan being explained to them.
- Patients with appointment showed more patience with the dental students as compared with the emergency patients.
- The higher level dental students found it difficult to make the patient accept their proposed treatment plan as compared to the lower level students.
- Patients tend to reject the treatment plans offered to them by higher levels of dental students as compared to lower levels.

CONFLICT OF INTEREST

There is no conflict of interest among the authors in publishing this article.

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