The Impact of Fixed Prosthodontic Education Kit on Patients' Awareness and Knowledge in Universiti Teknologi MARA (UiTM)

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Abstract. The study aims to develop Fixed Prosthodontic Education Kit(FPEK) to measure patients' awareness and knowledge on fixed prosthodontic treatment options. The patients' knowledge in advantages and disadvantages of each type of prosthesis was also evaluated. **Methods**. The study was divided into 2 parts: 1) Development of the kit, 2) Modification, validation and questionnaire distribution to patients. The kit comprises of various types of bridge and crown in a rectangular box, flashcards and a video. In Part 2, a quantitative study using a modified and validated self-administered questionnaire from previous studies. It was randomly distributed to 343 participants who later were divided into 2 groups; Group 1, assisted with Fixed Prosthodontic Education Kit(FPEK) and verbal-assisted Group 2. The participants were invited to answer a 5-points likert scale, nine items questionnaire with awareness and knowledge domains. Data was recorded in SPSS version 25. An independent t-test was used for statistical analysis with $p < 0.05$. **Result**: No significant difference was found on the awareness of the fixed prosthodontics among the groups prior to the introduction of the kit.Patient's also has higher knowledge in advantages and disadvantages of each type of prosthesis when analyzed using Independent t-test ($p=0.00$). **Conclusion**: A Fixed Prosthodontic Education Kit is a useful education tool to provide knowledge and create awareness to patients. It facilitates dental practitioners and provides higher impact in giving information before a decision-making of the treatment prescribed.

1. Introduction

The interaction between dentists and patients is crucial in making appropriate treatment decision. Dentists usually experienced difficulties in explaining the treatment plan to their patients and usually through verbal or pictorial presentations. 53.6% of patients stated their dentists are their source of hearing about implant followed by relatives and friends, internet, someone who has received an implant, newspapers or magazines (Kohli et al., 2018). Several studies evaluated patients' awareness on prosthodontic treatments found that 95.93% of people have heard about prosthodontic treatment to replace the missing teeth but only 57.82% people are willing to undergo treatment (Reddy et al., 2016). A study conducted by Murkute et al. (2017), indicated only 31% of patients knew about dental implants as tooth replacement options. An effort done by a group of researchers developed a mobile application to effectively explained about dental implants to patient, found that this approached has improved the information sharing to enhance the patient's decision making (Canbazoglu et al., 2016).

Few have focused on computerized system in a dental environment and these studies do not present a visualize holistic information sharing (Vogel A., 2005, Scheleyer et al., 2006). Hence, it is essential to develop an innovation model on fixed protheses with the purpose to assist in delivering a comprehensive information to patient thus provide a good understanding on the treatment given by the dentist. Therefore, the aim of this study is twofold. Firstly, to develop a Fixed Prosthodontic Education Kit model, secondly, to modified and validate prostheses.

2. Materials and Method

This study is a cross-sectional study and was ethically approved by the UiTM Research Ethics Committee 600-IRMI (5/1/6). The study was divided into 2 parts; Part 1; development of Fixed Prosthodontic Education Kit and Part 2; modification, validation and distribution of questionnaire. study using a modified and validated self-administered questionnaire from previous studies. The kit comprises of various types of bridge and crown in a rectangular box, flash cards and a short video CD. The prepared kavo teeth were embedded in an epoxy resin exposing only the crown portion. A range of fixed prostheses were constructed from two types of materials including metal alloy and ceramic. The compositions of the alloy are 61% Cobalt, 27% Chromium, 6% Molybdenum, 5% Tungsten, 1% Silicon, 1% Manganese, Iron and Carbon. These metals were used for full metal crown, as a coping for bonded crown and bridge. The development of kit was supervised by both supervisors.

The questionnaire was modified and validated from the previous study. It was tabulated in a form consists of 9 questions based on two domains: awareness and knowledge. The validation includes by content validation (3 prosthodontists) and face validation (10 patients). A quantitative study using a validated self-administered questionnaire was randomly distributed to 343 participants who were divided into 2 groups; Group 1, assisted with FPEK and verbal-assisted for Group 2. The participants were invited to answer a 5-points Likert scale, nine items questionnaire with awareness (5 questions) and knowledge (4 questions) domains. Data was recorded in SPSS version 25 (IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.). An independent t-test was used for statistical analysis with $p < 0.05$.

3. Results

The sample consisted of 32.1% males (n=86) and 67.5% females (n=181) who is willingly participated in this study. The patient's mean age is 37.94 + 16.83 years with the response rate is 78% (n=268).

Based on statistical analysis, Independent t-test demonstrated no significant difference between Group 1(FPEK) and Group 2(verbal explanation) on patients' awareness related to treatment options in Fixed Prosthodontics. This is upon given the questionnaire to patients prior to the introduction of FPEK and verbal explanation. For knowledge domain, it was found that there was a significant difference between groups after they were introduced with FPEK (Group 1) and given verbal explanation (Group 2).

In one of the questions on awareness domain that described the advantages and disadvantages of Fixed Prosthodontics, it was found that Group 2 has higher mean value (3.21) compared to Group 1 (2.70) (Figure 1). There was statistically significant difference between both groups as the p value was 0.00. Another question on knowledge domain indicated FPEK gave more benefits to patients in describing each fixed prosthesis as the mean value was 4.67 compared to verbal explanation group which was only 3.76 (Figure 2).

The results were further elucidated to assess whether the kit gives an impact to the knowledge or awareness of the patients. It was found that the patients have higher knowledge for both groups after the introduction of kit and with verbal explanation. However, comparing the group that was assisted with FPEK, the patients have better knowledge (mean value=18.52) than verbal explanation group, whereby, the patients have lesser knowledge (mean value=15.09) but higher awareness (mean value=17.92).

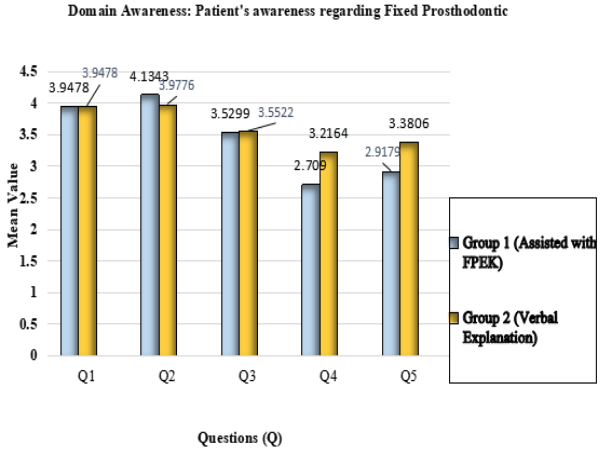

Figure 1

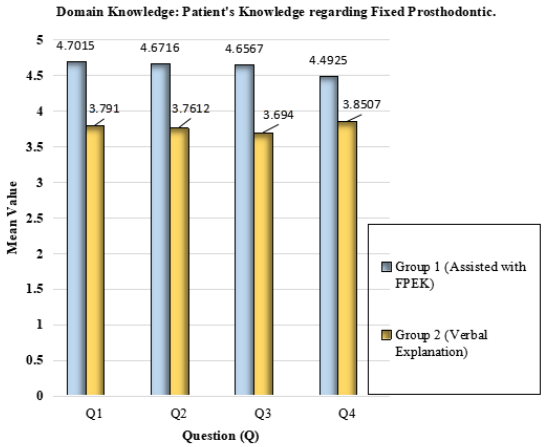

Figure 2

4. Discussion

Both groups demonstrated the same awareness prior to the distribution of FPEK or verbal explanation. This is because the participants have the same level of understanding on fixed prosthodontic. Generally, with the introduction of FPEK and verbal explanation to the participants, their knowledge is increased. The highest percentage was from FPEK group. This is in agreement with the study done by Canbazoglu et al. (2016) stated that the mobile application approach improved the information sharing to effectively explained about dental implant to patients. It has been found that prior to initiation of FPEK and verbal explanation, Group 2 has a better understanding regarding advantages and disadvantages of fixed prosthodontic. However,

after demonstration of FPEK to patients, Group 1 exhibited superior knowledge than Group 2. FPEK helps in providing knowledge to the patients rather than verbal explanation since they can feel, touch and view the prosthesis themselves as contrast with the study by Vogel et al., 2005.

5. Conclusion

A Fixed Prosthodontic Education Kit is a useful education tool to provide knowledge and create awareness to patients. It facilitates dental practitioners and provides higher impact in giving information before a decision-making of the treatment prescribed. Patient can appreciate the kit: touch, feel and view the prosthesis and the procedures before making decision for their fixed prosthesis treatment.

6. References

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