

Assessing the Readiness of Dental Students in Providing Dental Health Education (DHE) Regarding Sugar: A Pilot Study

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Objectives: This study assessed dental students' readiness in giving information about dietary sugar intake and the effectiveness of the intervention in increasing their knowledge when giving sugar-related advice to patients. **Materials and Methods:** 176 dental students from Faculty of Dentistry, Universiti Teknologi MARA (UiTM) participated in this study. A self-administered questionnaire was administered to Year 3, 4 and 5 dental students in the classroom that assessed their basic knowledge and perceived readiness in educating patients regarding sugar before and after the intervention. The interventions were inclusive of a handheld brochure and a 90-second video projection regarding hidden sugars, recommended daily sugar intake and how to identify sugar content on food labels. **Results:** The students' basic knowledge regarding sugar and their perceived readiness were significantly improved following the intervention. The mean scores for baseline was 5.69, (SD = 1.331) and post-intervention score was 9.87, (SD= 0.355), p value < 0.05 and 95% CI. The score remains higher than the baseline 4 weeks after the intervention with 9.04 (SD= 0.858), p value < 0.05 and 95% CI. **Conclusion:** The intervention improved the students' knowledge in delivering sugar-related advices and some aspects of food label literacy regarding sugar. This will facilitate and empower the students to deliver consistent and practical messages about sugar with regards to oral and general health to their patients.

1. Introduction

Sugar intake of the general population is above the recommended guidelines with high consumption of sugar and sweetened drinks (1). It also tends to be high among the disadvantaged group of population who also experienced higher prevalence of tooth decay, obesity and other health consequences (1-3). Limiting the intake of sugar and sweetened drinks can effectively reduce the prevalence of the obesity and other associated health conditions (4,5). Sugar intake among Malaysians exceeded 10% of total calorie intake daily which exceeds the daily sugar intake recommendations by WHO (2,6).

For over decades there have been marked changes in the way that Malaysian population consumed foods. Packed foods and beverages were being mass produced and readily available with millions spend on its advertising. These lead to overconsumption of unnecessary foods with high sugar intake as the food labels on these products is often confusing. Thus, reading food labels for sugar content requires knowledge of various nomenclatures used by different food manufacturers. Generally, sugar contents are labelled as 'sugars', 'added sugars', 'free sugars', 'refined sugars' and 'sweeteners'(7). Each term refers to specific or combined types of sugar which were difficult to be identified by the consumer. Sometimes these terms were not labelled clearly in the nutrition label on the food products or beverages (7,8).

Studies have shown that sugar-related diet advice given by general dental practitioners were inconsistent in terms of content and quality of delivery (8-10). This served as an important reminder to future graduates as dentists was expected to have a sound knowledge related to sugar not only for oral health but for general health. This study aimed to assess the effectiveness of the intervention that aimed to provide practical information of dietary sugar recommendations to dental students and to know their perceived readiness in giving sugar-related diet advice to patients. The null hypothesis tested is that there is no difference in the students' knowledge and readiness before and after the intervention given.

2. Materials and Methods

Participants Selection

176 undergraduate dental students from Year 3 to Year 5 at the end of 2016/2017 academic session from Faculty of Dentistry UiTM participated in this study. Written consent was obtained from Year 3 (69 students), Year 4 (55 students), and Year 5 (52 students). A self-administered questionnaire was distributed at three stages, classroom-style; before the intervention (as baseline), immediately after (post-intervention) and four weeks after the intervention (4-week follow up).

The questionnaire

The questionnaire consisted of 10 close-ended questions that assessed the student's basic knowledge and perceived readiness in educating patient regarding sugar based on the Scientific Advisory Committee on Nutrition (SACN) in 2015 published in Sugar Reduction, The evidence for action (5).

The intervention

The intervention was given after the students completed the pre-intervention set of the questionnaire. The intervention consisted of a 90-second video and a handheld brochure containing facts and information regarding hidden sugars, daily sugar intake and understanding sugar content on food labels from local food and beverages that are commonly consumed by the Malaysian population.

Students were asked to answer similar set of questionnaires after they have watched the video and read the brochure. Evaluation was carried out at post-intervention (immediately after the intervention) and after 4 weeks of post-intervention. After 4 weeks of post-intervention, the participants were given the same questionnaire again without any intervention aid (brochure or video).

Data were then analysed using SPSS Version 23. Further analysis was done using paired t-test to compare the findings before and after intervention with significance value taken as p value < 0.05. Ethics approval for this study was granted on 6th March 2017 from the Ethics Committee, Universiti Teknologi MARA (UiTM).

3. Results

There are substantially more female students than male students among the respondents.

A paired-sample t-test was conducted to compare mean difference the scores of basic knowledge regarding hidden sugar before and after the intervention (Table 1). The findings suggested that the students' average total score was higher post-intervention and 4 weeks after. A paired-sampled t-test revealed a significant difference in the total scores achieved by the students before and after the intervention, $t(175) = -40.267, p = 0.000$.

Total Marks	Mean	N	Std. Deviation	Std. Error Mean
Baseline	5.69	176	1.331	0.100
Post Intervention	9.87	176	0.355	0.027
4 weeks follow up	9.04	176	0.858	0.065

Table 1. Mean scores at baseline, post intervention and after 4 weeks

The findings before and after intervention have significantly demonstrated that the intervention was able

to improve the students' knowledge in giving sugar-related advice to patients. (Figure 1).

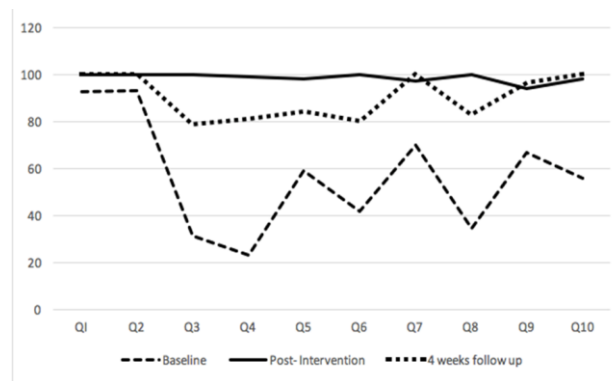


Figure 1. Percentage of Total Correct Answer by Question

4. Discussion

Sugar is the most important dietary factor that contribute to dental caries formation. It is important for the future dentist to master the fundamental idea of a recommended dietary sugar intake. Dental students play an important role in conveying a consistent sugar-related message to their patients because sugar were undoubtedly the most important dietary factor in the etiology of dental caries (8-11) This study has also shown that the interventions provided were able to generate short-term improvement of the students' knowledge in delivering sugar-related advice that included some aspects of food label literacy. The results will benefit the dental curriculum pertaining in issues related to a specific and relevant diet advice to Malaysian population. Despite it was being taught in the curriculum, the practicality and the application of it by the students deserved to be periodically gauged and calibrated. This was due to the fact that sugar recommendation often vary greatly that confused even the nutrition practitioner (12). This confusion was partly due to the differences in definitions of sugar and its measurement methods (13).

5. Conclusion

Future dental professionals should be able to convey a consistent sugar-related health education that complement their clinical services delivered. It is important that health professionals are clear and consistent in the delivery of their dietary advice especially with regards to sugary intake given to patients.

6. References

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