

PARENTAL ORAL HEALTH EDUCATION THROUGH SOCIAL MEDIA AND ITS IMPACT ON ORAL HEALTH OF CHILDREN

Mohammed Almarshad¹, Bader Dhahi¹, Oday Alghanim¹, Mohammed Zaid¹, Mobarak Alfawwaz¹, Abdulrahman AlSaffan², Shahzeb H Ansari^{3*}

¹ Dental Interns, Riyadh Elm University, Riyadh, Saudi Arabia.

² Assistant Professor, Dental Public Health, Riyadh Elm University, Riyadh, Saudi Arabia.

³ Faculty of Preventive Dentistry, Riyadh Elm University, Riyadh, Saudi Arabia. shahzebhasan@riyadh.edu.sa

<https://doi.org/10.51847/YpJ8Y1rVoH>

ABSTRACT

Parents play a vital role in developing and improving a sense of oral healthcare behavior among their children. Habits such as tooth brushing, mouth rinsing, and flossing have to be incorporated in children with the help of parents. This is an observational study, with the before and after effects of educational video. The first step was an examination of children to measure plaque index and oral hygiene index. The second step included sending pre-questionnaire and video links to parents on WhatsApp for their education, and we contacted them later to ensure that the complete video has been shown to the child. The third step was taken after 3 weeks and measured the plaque and simplified oral hygiene index once more to achieve a comparison between pre-and post-examinations. Finally, the parents were asked to fill the post-survey.

Findings show the difference in mean values for a pre- and post-video demonstration, with the difference in calculus being not statistically significant and plaque index being statistically significant. There is a significant improvement in the oral health of children when educational intervention is induced.

Key words: Oral health education, Social media, Children's oral health, Parents.

Introduction

It is a well-known fact that the oral health of children is directly associated with the level of parental knowledge and attitude towards oral health [1]. Parents play a vital role in developing and improving a sense of oral healthcare behavior among their children. Habits such as tooth brushing, mouth rinsing, and flossing have to be incorporated in children with the help of parents [2, 3].

Several studies have been done to determine the association between parental knowledge and attitude towards oral health and the habitual improvement of their children. In case these oral health practices among children do not improve, the chance of developing early childhood caries increases. It is a crucial responsibility of oral health care providers to rectify the negative beliefs and perceptions of parents to improve the oral health of their children [4, 5].

To successfully achieve the above-mentioned objectives, oral health educational programs play an important role. These intervention programs can be conducted using hands-on education, demonstration of brushing, flossing, and mouth rinsing, and showing animated educational videos. Studies have shown a positive effect on the improvement of oral health care behaviors among children when provided education in schools [6-8].

This study will utilize educational videos from various topics related to oral health behaviors and dietary habits. Several studies have been conducted to measure the effectiveness of these videos on improving oral health-related behaviors. There has been a positive impact of educational videos on the overall oral health behavior of recipients [9, 10].

Al-Saffan et al. (2017) conducted a comprehensive oral health education program using videos to assess the improvement in children's knowledge [11]. Findings suggested a significantly better level of knowledge after the educational program.

King Salman Center for Children's Health (KSCCH):

This research will be conducted in cooperation with KSCCH, which is following the Saudi Arabian Vision 2030. The Saudi Arabia Vision 2030 about health care concentrates on enhancing the quality of our preventive and therapeutic services and focuses on promoting preventive care.

King Salman Center for Children's Health (KSCCH) and Riyadh Elm University together provided numerous school educational programs in Riyadh city to improve the health and oral health knowledge of community groups [11].

Study Hypotheses:

Parental involvement in video-based education can improve their children's oral health-related behavior.

Aims of the Study:

1. To assess the level of improvement in oral hygiene and habits in children before and after the educational video demonstration to parents
2. To encourage and teach parents and their children, the right way of using a toothbrush and dental floss
3. To find and assess modern ways to learn rather than traditional ways

Materials and Methods*Study Design and Steps:*

This is an observational study, with the before and after effects of educational video. The first step was an examination of children to measure plaque index and oral hygiene index. The second step included sending pre-questionnaire and video links to parents on WhatsApp for their education, and we contacted them later to ensure that the complete video has been shown to the child. The third step was taken after 3 weeks and measured the plaque and simplified oral hygiene index once more to achieve a comparison between pre-and post- examinations. Finally, the parents were asked to fill the post-survey.

Study Sample:

52 male students aged 10-12 years were selected from a private school and their parents were also contacted.

Patients' Confidentiality:

Patients' confidentiality was maintained by not using their complete names. Instead, we used their initials only and each patient was given a number to identify.

Study Instrument:

We used two indices, plaque as well as simplified oral hygiene, with using WHO Prop and Explorer disposables, gloves, and mask

Instrument Reliability:

Clinical examination and measurement of indices were done on each child by at least two levels 12 dental students. Inter-examiner reliability (kappa) was calculated using SPSS version 22 and a value more than 0.6 was considered acceptable.

Statistical Analysis:

The collected data were analyzed using SPSS version 22, where descriptive as well as inferential statistics were conducted. Comparisons between groups were made using the Wilcoxon test with the value of significance kept under 0.05.

Results and Discussion

Oral examinations consisting of calculus and plaque indices were done before and after the video presentations through parents. The paired sample t-test was done to compare between pre-and post-oral examinations. Inter-rater

reliability was also measured using SPSS and the value was determined to be acceptable (kappa: 0.722).

*Pre- and Post- Examinations:**Calculus Index:***Table 1.** Pre- and Post- Results for Calculus Index

Pair	Pre-mean Post-mean	Mean	Std. Deviation	P- value
Pre-calculus	.022	.022	.149	.323
Post-calculus	.000			

*Plaque Index:***Table 2.** Pre- and Post- Results for Plaque Index

Pair	Pre-mean Post-mean	Mean Difference	Std. Deviation	P- value
Pre-plaque	1.35	.266	.579	.004
Post-plaque	1.08			

Tables 1 and 2 show the difference in mean values for a pre- and post- video demonstration, with the difference in calculus being not statistically significant and plaque index being statistically significant.

Overall Knowledge Assessment:

The difference in pre-and post-tests is demonstrated below in table 3 where the Wilcoxon sign rank test was conducted. It can be noted that there is a statistically significant difference between pretest and posttest values.

Table 3. The Number of Students with Total Number of Correct Answers in Pre- and Post- Test.

Overall score Categories	Pretest, n (%)	Posttest, n (%)	Percentage Change	P- value
Low (0-9)	23 (44.2%)	14 (26.9%)	-15.4	<0.001
Medium (10-14)	19 (36.5%)	15 (28.8%)	-7.7	
High (14-18)	10 (19.2%)	23 (44.2%)	26.9	

This study was conducted to determine the difference in knowledge and attitude towards maintaining oral hygiene by the intervention of educational videos shown to the school children by their parents. It is clear from the findings that there is a significant improvement in the knowledge as well as attitude towards oral hygiene. A study conducted in India suggested similar findings where they found a statistically significant difference and improvement in children's knowledge. They also utilized the method of video incorporation as a tool of education. However, we used 52 subjects in our study as compared to their number which was 10 [9].

Several studies have been conducted to demonstrate the association between educational intervention and change in

behaviors. It is believed that the human mind accepts animations and presentations in a much better way as compared to written or verbal information. These studies have undertaken the pre-and post-tests to confirm the level of improvement, but there is a slight dependency of results on the duration for which the intervention was applied [12, 13].

This study was successful in achieving its goal of improving oral hygiene as well as the knowledge related to oral health. Similar results have been reported by multiple studies and the effectiveness of educational programs has been acknowledged. It was also revealed in these studies that the improvement in oral health behavior was associated with the willingness of participants as well as the dedication of public health workers [14, 15].

Our results revealed that oral hygiene was also improved as a result of educational intervention, which was measured by clinical examination. Several other studies have also reported similar findings as they observed a positive change due to the educational intervention regarding oral health [16, 17].

Conclusion

- There is a significant improvement in the oral health of children when educational intervention is induced.
- Knowledge of children can be enhanced if attractive videos can be used as a tool of education.
- School curriculum can be modified to make educational intervention a permanent component.

Acknowledgments: Authors of this study would like to acknowledge the support and cooperation of the research center of Riyadh Elm University. None

Conflict of interest: None

Financial support: None

Ethics statement: This study fulfilled all the ethical requirements including data collection and confidentiality of study participants.

References

1. Ren-Zhang L, Chee-Lan L, Hui-Yin Y. The awareness and perception on Antimicrobial Stewardship among healthcare professionals in a tertiary teaching hospital Malaysia. *Arch Pharm Pract.* 2020 Apr;11(2):50-9.
2. Tiwari T, Rai N, Colmenero E, Gonzalez H, Castro M. A community-based participatory research approach to

understand urban Latino parent's oral health knowledge and beliefs. *Int J Dent.* 2017 Mar 29;2017.

3. Nguyen UN, Rowe DJ, Barker JC. Survey of knowledge, beliefs, and behaviors of migrant vietnamese parents regarding young children's oral health. *Am Dent Hyg Assoc.* 2017 Apr 1;91(2):45-53.
4. Virgo-Milton M, Boak R, Hoare A, Gold L, Waters E, Gussy M, *et al.* An exploration of the views of Australian mothers on promoting child oral health. *Aust Dent J.* 2016 Mar;61(1):84-92.
5. Dabawala S, Suprabha BS, Shenoy R, Rao A, Shah N. Parenting style and oral health practices in early childhood caries: a case-control study. *Int J Paediatr Dent.* 2017 Mar;27(2):135-44.
6. Haque SE, Rahman M, Itsuko K, Mutahara M, Kayako S, Tsutsumi A, *et al.* Effect of a school-based oral health education in preventing untreated dental caries and increasing knowledge, attitude, and practices among adolescents in Bangladesh. *BMC Oral Health.* 2016 Dec;16(1): p. 44.
7. Habbu SG, Krishnappa P. Effectiveness of oral health education in children—a systematic review of current evidence (2005–2011). *Int Dent J.* 2015 Apr 1;65(2):57-64.
8. El Meligy O, Bahannan S, Hassan M, Elteley S, Kayal R, Qutob A, *et al.* Oral Health Status and Habits among 6-13 Years Old Children with Limited Access to Dental Care in South Jeddah. *Int J Pharm Res Allied Sci.* 2019 Jul 1;8(3):109-18.
9. Shah N, Mathur VP, Kathuria V, Gupta T. Effectiveness of an educational video in improving oral health knowledge in a hospital setting. *Indian J Dent.* 2016 Apr;7(2):70.
10. ElKarmi R, Hassona Y, Taimeh D, Scully C. YouTube as a source for parents' education on early childhood caries. *Int J Pediatr Dent.* 2017 Nov;27(6):437-43.
11. Al Saffan AD, Baseer MA, Alshammary AA, Assery M, Kamel A, Rahman G. Impact of oral health education on oral health knowledge of private school children in Riyadh city, Saudi Arabia. *J Int Soc Prev Community Dent.* 2017 Nov;7(Suppl 3):S186.
12. Lueveswanij S, Nittayananta W, Robison VA. Changing knowledge, attitudes, and practices of Thai oral health personnel with regard to AIDS: an evaluation of an educational intervention. *Community Dent Health.* 2000 Sep 1;17(3):165-71.

13. Palin-Palokas T, Nordblad A, Remes-Lyly T. Video as a medium of oral health education for children with mental handicaps. *Spec Care Dentist*. 1997 Nov;17(6):211-4.
14. Nakre PD, Harikiran AG. Effectiveness of oral health education programs: A systematic review. *J Int Soc Prev Community Dent*. 2013 Jul;3(2):103.
15. Gray-Burrows KA, Owen J, Day PF. Learning from good practice: a review of current oral health promotion materials for parents of young children. *Br Dent J*. 2017 Jun;222(12):937.
16. Yalcinkaya SE, Atalay T. Improvement of oral health knowledge in a group of visually impaired students. *Oral Health Prev Dent*. 2006 Sep 1;4(4):243.
17. Hebbal M, Ankola AV. Development of a new technique (ATP) for training visually impaired children in oral hygiene maintenance. *Eur Arch Paediatr Dent*. 2012 Oct;13(5):244-7.