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Classdojo Application as an Effort to Increase Knowledge Of Dental Health Maintenance in Adolescents

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ABSTRACT

Background: Oral and dental health problems remain a significant issue in Indonesia, especially among adolescents. The low level of knowledge regarding oral hygiene practices is one of the main causes of the high prevalence of dental caries in individuals aged 15–18 years. Therefore, engaging and effective educational methods are needed to raise awareness and improve adolescents' knowledge of oral health maintenance. Objective: This study aimed to effective the level of knowledge among adolescents before and after a health education intervention using the ClassDojo application. Method: This research employed a quasi-experimental design with a one-group pretest-posttest approach. The sample consisted of 33 adolescents selected through total sampling. Data were collected using pretest and posttest questionnaires distributed online via the ClassDojo application. Results: The study showed an increase in knowledge, from 48.5% in the moderate category before the intervention to 93.9% in the good category after the intervention. Conclusion: Health education using the ClassDojo application is effective in improving adolescents' knowledge of oral and dental health maintenance.

INTRODUCTION

Oral and dental health is an integral part of overall body health. Good oral health not only supports digestive function through chewing but also plays a vital role in social interactions and a person's quality of life (Purnama et al., 2024). Unfortunately, in various countries, including Indonesia, oral and dental health problems remain a significant issue, particularly among children and adolescents. One of the main factors contributing to this problem is the low level of public knowledge about oral health maintenance(Kantohe et al., 2016).

According to data from Indonesian Health Survey (Kemenkes, 2023), the prevalence of dental and oral health problems among adolescents aged 15-24 remains quite high, with tooth decay reaching 47.3%. Dental caries is one of the most common diseases, especially among adolescents. Among adolescents aged 15-24, the prevalence of dental caries reached 75.3%, with most adolescents unaware of the importance of regular dental care for maintaining oral hygiene. This indicates that knowledge regarding dental and oral health care still needs to be broadly improved among the public (Ratih & Yudita, 2019).

Good oral health care begins with an understanding of dental hygiene, including proper brushing habits, frequency, and the importance of regular dental visits (Nurilawaty et al., 2021). Research (Ratih & Yudita, 2019) found that one of the main reasons for low dental health awareness is the lack of adequate health education on how to care for teeth and mouth. This is believed by the public to underestimate the long-term impacts of poor dental hygiene, such as infection, periodontal disease, and even tooth loss at a young age (Juliantari, 2022).

Knowledge about dental and oral health care plays a crucial role in developing good dental health behaviors (Erdiyani et al., 2023). Green's theory explains that behavior is determined by predisposing factors, which facilitate a person's behavior, such as knowledge, attitudes, beliefs, customs, traditions, and so on (Notoatmodjo, 2014). Individuals with better knowledge about dental health care tend to have better habits, such as regular brushing, flossing, and regular dental checkups. Conversely, a lack of knowledge can

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lead to inappropriate dental hygiene behaviors, ultimately increasing the risk of developing dental and oral diseases (A'yun et al., 2021).

A lack of knowledge about dental and oral health is also found among adolescents, who often do not receive adequate education about the importance of dental hygiene from an early age (Fadjeri et al., 2022). Adolescents are a group that is highly susceptible to dental problems, especially caries, due to their habit of consuming sugary foods and irregular tooth brushing frequency. The importance of dental and oral health care is also often overlooked by adults, who consider dental problems to be minor issues that do not require special attention. However, poor dental and oral health can have serious impacts on general health (Himmamie, 2019). Untreated dental disease can lead to infections that spread to other parts of the body, increasing the risk of heart disease, diabetes, and pregnancy complications. Therefore, knowledge about the importance of maintaining dental and oral health needs to be instilled from an early age, both through education in schools and through more intensive public health education (Nadialista Kurniawan, 2021).

Adolescents are vulnerable to dental disease due to poor habits that are not conducive to good oral health, such as consuming sugary foods and not brushing teeth before bed (Hidayati et al., 2021). Local surveys indicate that adolescents' knowledge of oral health care remains low, despite the availability of adequate health facilities (Rahmawati et al., 2024).

A solution to improving adolescents' knowledge about dental and oral health care in the Pekayon area of East Jakarta involves implementing good habits through a more engaging and interactive educational approach. Research by Santoro (2023) suggests that digital media can be a solution to increase the effectiveness of health education, particularly in attracting the attention of the younger generation.

Health education is one way to raise public awareness, including among adolescents, about the importance of maintaining dental and oral health. Conventional methods such as lectures often fail to engage and motivate adolescents. Therefore, new approaches to health education are needed, particularly by utilizing technology relevant to their daily lives (Putri & Kartika, 2021). ClassDojo is a popular digital platform for interactive learning. Initially designed to improve communication between teachers, students, and parents, it has also proven effective in delivering educational messages, including health education. Research by Kurnian et al. (2023) shows that using ClassDojo as a health education medium can significantly increase student participation and understanding.

One step that can be taken to improve adolescents' knowledge about maintaining dental and oral health is to organize dental health education in the Pekayon area of East Jakarta that can involve various parties, including health workers, residents, and parents, to ensure that adolescents receive the right information about the importance of maintaining dental and oral health (A'yun et al., 2021). Thus, it is important for all parties, including the government, schools, and families, to work together to improve public knowledge about maintaining dental and oral health. Adequate knowledge will have a positive impact on creating healthy behaviours in maintaining dental and oral hygiene. This not only prevents dental and oral health problems but also improves the overall quality of life of the community (Humayrah et al., 2022).

METHOD

The research design used was a quasi-experimental study with a pre-test and post-test design. The sample is a portion of the actual population and its characteristics that are studied and conclusions drawn from. In this study, the technique used was total sampling. Based on the research, the total population was 35 adolescents, but two adolescents were absent during data collection. The sample criteria for this study included: Adolescents aged 15-18 years in RT 010 RW 010 Pekayon Pasar Rebo, East Jakarta; Willingness to participate in the study by completing an informed consent form; Present during the pre- and post-tests, as well as counseling.

In this study, the data collectors were the researchers themselves, assisted by two sixth-semester students from the Dental Health Department at the Jakarta I Health Polytechnic, a Ministry of Health official. They had previously been calibrated to ensure a common understanding of the patient's perceptions and to avoid errors in data collection. In this study, the researchers used a questionnaire with a total of 20 pre-test and post-test questions to assess adolescents' knowledge of dental and oral health care.

The data collection procedure regarding the overview of knowledge regarding dental and oral health care before and after counseling using ClassDojo was conducted among adolescents aged 15-18 in the Pekayon area, East Jakarta. The research methodology was as follows:

1. The researcher explained how to use the ClassDojo website/application to adolescents aged 15-18 years in Pekayon, East Jakarta.
   Here's how to use the ClassDojo app as a participant:
   a. Download the app from the Google Play Store or Apple App Store.
   b. Open the app and select the option to register as a participant.
   c. Enter the required information, such as name and email address.
   d. Enter the code provided by the researcher to join the appropriate class.
   e. After joining, you can view class activities, such as feedback from the researcher, and participate in discussions.
   f. You can also view points earned based on participation and behavior in class.
2. The researcher distributed questionnaires via the ClassDojo website/app for a pre-test to adolescents aged 15-18 in Pekayon, East Jakarta, and they were given 20 minutes.
3. The researcher began distributing educational materials on oral health maintenance via the ClassDojo website/app.
4. The education was declared complete when several adolescents had earned the highest points.

The research data was analyzed using descriptive analysis. The research data is then presented in tabular form to provide an overview of the variables studied.

RESULT

Table 1. Frequency Distribution of Knowledge before being given counseling using ClassDojo

Knowledge	Frequency	Percent (%)
Good	14	42,4
Moderate	16	48,5
Poor	3	9,1
Total	**33**	**100**

Table 1 shows that before being given counselling using ClassDojo to adolescents aged 15-18 years, 16 adolescents (48.5%) had knowledge in the moderate category, 14 adolescents (42.4%) had knowledge in the good category and 3 adolescents (9.1%) had knowledge in the poor category.

Table 2. Frequency Distribution of Knowledge after being provided with counselling using ClassDojo

Knowledge	Frequency	Percent (%)
Good	31	93,9
Moderate	2	6,1
Poor	0	0
Total	**33**	**100**

Table 2 shows that showed that after being given counselling using ClassDojo, there were 2 teenagers (6.1%) who had moderate knowledge, 31 (93.9%) who had good knowledge, and there were no teenagers in the poor category.

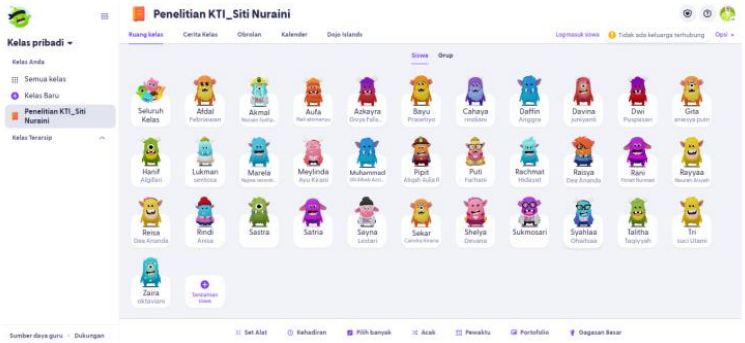


Figure 1. ClassDojo Features

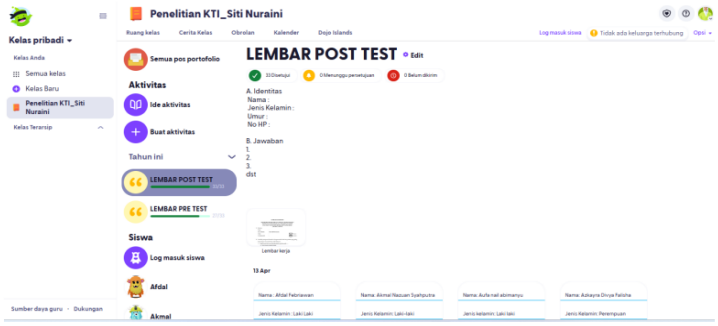


Figure 2. Pretest and posttest features in ClassDojo



Figure 3. Participant attendance feature in ClassDojo

DISCUSSION

The results of this study obtained data from 33 adolescents who served as samples. The results showed that adolescents before receiving counselling using ClassDojo achieved the highest score, with 16 (48.5%) achieving a moderate score. After counselling, there was a significant improvement, with 31 adolescents (93.9%) in the good category. It can be concluded that the increase in knowledge about dental and oral health maintenance was due to several key factors, which are also supported by the results of other studies.

These results align with research conducted by Putri et al. (2022) entitled "ClassDojo: A Distance Learning Solution." This study demonstrated that the ClassDojo application is an effective interactive medium for improving learning outcomes. The data obtained showed that the increase in understanding before was 50.23%, and after it increased to 80.58%.

ClassDojo is able to support the learning process in a flexible and communicative manner, while encouraging active adolescent involvement in the learning process. Based on the research results of Rosnawati (2022) entitled "Use of the ClassDojo Application by Foreign and Indonesian Educators and Its Impact on Student Learning Outcomes," the results of pre-test and post-test data for 14 students in grade III A taught by foreign educators showed a significant increase from 44.28% to 83.57%. Meanwhile, for grade III B taught by Indonesian educators, the results increased from 59.57% to 92.64%. The use of ClassDojo by both foreign and Indonesian educators significantly improved mathematics learning outcomes in grade III, as the icons and features, both images and sounds, were unique and engaging, keeping students focused on learning, thus maintaining stable classroom management.

Based on the research results of Munandar et al., (2024) entitled "The Implementation of the ClassDojo Application and the Role of Parents in Mathematics Learning to Facilitate Students' Understanding Levels at SDN Sepatan I," the results of a comparison of post-tests in the control and experimental classes revealed a significant difference in the lowest scores for the control and experimental classes, with the control class achieving 40 points and the experimental class achieving 56 points. These results indicate that after the treatment, both classes experienced improvements in learning outcomes, but the improvement was greater in the experimental class. There was a positive effect and higher scores on understanding levels using the ClassDojo application compared to conventional methods in the experimental class. This application is easy for teachers and students to use in the learning process. Besides being free to download on smartphones, its user interface and interface are very attractive, making it suitable for use in the classroom or at home. The ClassDojo application can be used by teachers, students, and parents simultaneously with classroom learning.

ClassDojo is a digital learning platform with various advantages, including improving student discipline and motivation, supporting the development of the 4C skills (critical thinking, communication, collaboration, and creativity), enhancing student understanding through parental involvement, providing interactive and engaging learning, and enhancing student discipline. Leveraging these advantages, counselling on dental and oral health maintenance for adolescents aged 15-18 in the Pekayon Pasar Rebo area of East Jakarta demonstrated significant success, as evidenced by an increase in knowledge from "moderate" to "good."

This study attributed the increase in knowledge to the interactive educational platform, as ClassDojo is an educational technology platform that connects elementary school teachers, students, and families through digital communication features such as sharing videos, photos, and messages that can be translated into more than 35 languages. This platform is designed to build a positive classroom culture by providing direct feedback to students on behaviour and skills, and by enabling teachers to monitor and manage student behaviour interactively. In addition to communication media, ClassDojo also functions as a classroom behaviour management system that uses a point-based system for positive and negative student behaviour, thus helping teachers in character learning and more interesting and effective classroom management, especially in online learning.

CONCLUSION

Based on the research results, it can be concluded that there was an increase in knowledge of oral and dental health maintenance counselling using ClassDojo.

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