ORIGINAL ARTICLE

Increasing of oral health education knowledge after intervention psychoeducation methods in adolescents

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ABSTRACT

Introduction: The technique of imparting knowledge and understanding known as "psychoeducation" combines particular knowledge with media to communicate knowledge, is professionally provided, and integrates educational and psychotherapy treatments. Given the close connection between oral health and general health, oral health should not be neglected during the pandemic. Through the use of psychoeducational techniques, dental health issues can be prevented and overcome. The objective of this study is to analyze the increase in oral health education knowledge before and after intervention using psychoeducation methods in adolescents. **Methods:** This research was conducted using the one group pretest-posttest design. A study sample was obtained using the Slovin formula after a population was sampled using purposive sampling. The following requirements must be met in order for students to be included in the sample: they must be concerned about their oral health, be open to participating in psychoeducation webinars, and agree to participate as research subjects. There were 86 responses in the sample. By providing a questionnaire before (pretest) and after (posttest) the intervention in oral health education using psychoeducation method, the increase in knowledge can be measured. **Results:** The results of the Wilcoxon signed rank test with an alpha significance of 0.05 and Asymp. Sig (two-tailed) $p = 0.001$ ($p < 0.05$), or the knowledge factors of research respondents. This revealed significant improvements in respondents' knowledge between the pre- and post-intervention periods. **Conclusion:** The intervention of psychoeducational methods regarding oral health education could increase knowledge in adolescents. Psychoeducational methods can help adolescents learn more about oral health.

KEYWORDS
psychoeducation, psychotherapy, education, oral health, adolescent, COVID-19

INTRODUCTION

In terms of oral health knowledge, the adolescent had the lowest score. In this context, the following should be done in order for adolescents to develop adequate oral health awareness. As a result, school-based oral health education would be required to encourage adolescents to practice good oral health habits.[1] Adolescence is the period of life between childhood and adulthood, and occurs from the ages of 10 to 19.[2] It is a distinct period of human development and a critical time for setting the groundwork for optimal health. Adolescents grow rapidly in terms of physical, cognitive, and psychological development.[2] This influences their feelings, thoughts, decisions, and interactions with the environment around them.

Adolescents require knowledge, health treatments that are acceptable, equitable, appropriate, and effective, as well as safe and supportive surroundings, in order to grow and develop in good health, and they also require chances to contribute meaningfully in the design and implementation of programs to improve and preserve their health.[2] According to Riskesdas (2018), more than half of the population (51.9–55.6%) of teenagers have oral health issues, but only 8.7-9.4% receive treatment from dental medical professionals, Although about 96.5–98.5% of adolescents clean their teeth every day, only 2.1-3.3% do so at the appropriate times.[3]

World Health Organization (WHO) on March 11, 2020, proclaimed the coronavirus disease 2019 (COVID-19) pandemic.[4] The COVID-19 outbreak first occurred in China and has developed throughout the world, including Indonesia.[5] Given the dynamic link between oral health and general health, oral health should not be disregarded during public health emergencies.[6] One

strategy for increasing dental health knowledge is through oral health education.[1] According to a poll conducted by the Republic of Indonesia's Ministry of Health (Kemenkes RI), there was no difference in behavior before and after the pandemic. Seven out of ten respondents said they disliked seeing the dentist during the epidemic, and two out of five admitted to not brushing their teeth during the day. Additionally, twice as many people washed their hands (64%) than brushed their teeth (31%).[7]

During the pandemic, people's behavior toward searching out information increased due to public worry about the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, which led many to delay getting their teeth cleaned.[6] A study found a strong correlation between understanding how the SARS-CoV2 virus spreads and dental phobia. 44.7% of respondents reported having dental health issues during the epidemic, 79.9% knew that the SARS-CoV2 virus might be spread through dental care, and 31.85% said they would avoid treating patients during the pandemic.[8]

Psychoeducation is providing information and education to increase an individual's knowledge, which can be provided through methods of providing information or lectures, discussions, and watching videos.[9] The results of research by Coralia et al. showed that subjects who were given psychoeducation with these methods experienced an increase in knowledge.[9] Psychoeducation is the process of educating and/or enlightening people, either individually or in groups. The delivery of professional psychoeducation, which combines psychotherapy and educational interventions, has a flexible form that integrates particular information and media to inform the public.[10]

According to Lukens & McFarlane, psychoeducation is one evidence-based technique that is regarded as the most successful in both societal and therapeutic settings.[10] Psychoeducation is described as a knowledge transfer intervention for an illness and its treatment that integrates emotional and motivational factors to help patients cope with the condition and increase treatment adherence and efficacy. Psychoeducation is regarded as a significant component of medical problem treatment. Traditional Psychoeducation content focuses on the genesis of illness, the treatment process, drugs, coping strategies, education, and life skill training.[11] There are three areas of psychoeducation at the junior high school (SMP) level, one of which is the personal-social field, which includes initiatives to assist students, and another is life skills, such as the ability to maintain cleanliness and maintain physical health properly and regularly, including maintaining oral health.[12]

According to research done by Brondani, et al.[13] regarding the impact of the COVID-19 pandemic on behavioral and psychosocial factors related to oral health in adolescents, during the pandemic, brushing frequency, use of dental services, and need for self-felt dental care all significantly decreased, and there were changes in sugar consumption. The COVID-19 pandemic's effects on oral health and psychosocial factors were studied by Ciardo et al.[14], and the results revealed statistically significant differences for OHRQoL, stress, anxiety, and depression levels between respondents with greater emotional load, the same or less than before the pandemic.

The psychoeducation method has several significant advantages compared to conventional education, especially in the field of health promotion programs. In the psychoeducation method, there is not only a transfer of knowledge to the patients about their illness but also the management of their psycho emotional state to reach the goal of treatment holistically.

The oral cavity is host to a varied range of microorganisms, including bacteria, fungus, and viruses, all of which play an important role in the maintenance of oral and systemic health. It is critical for oral health practitioners to educate patients and the general public about the importance of proper oral hygiene and its impact on overall health.[15] Bad oral hygiene and oral diseases can lead to disease in other parts of the body, maintaining healthy teeth and mouth is an attempt to preserve the health of the entire body and avoid disease in other parts of the body.[16] Through the use of psychoeducational methodologies, the objective of this study is to analyze the increase in oral health education knowledge before and after intervention psychoeducation methods in adolescents.

METHODS

In this study, the experimental design of one group pre-test post-test was adopted. An instrument in the form of a questionnaire with up to 15 multiple-choice items was used for the measurement, and it was administered both before and after the intervention, which took the form of hybrid psychoeducational activities about oral health during the COVID-19 pandemic. The subjects, objectives, materials, steps, media, evaluation, and resources of the psychoeducation module are included. Particularly, with a hybrid method that integrated the transfer of knowledge and the management of the respondents' psychologic and behavior. This is different from conventional education, which only transfers knowledge. After the intervention using the psychoeducation method, the respondents will not only have the knowledge but will also change their behavior to maintain their oral health condition.

In August 2022, the study was carried out at SMP Negeri 1 Kuningan. The inclusion criteria for this study sample were as follows: feeling anxious about oral health; willingness to participate in psychoeducation webinars that will be given; and willingness to be research subjects. The sampling technique used purposive sampling techniques with a population of SMPN 1 Kuningan students who had subjective feelings of anxiety about visiting the dentist during a pandemic.

Students who refused to participate or who did not adhere to a complete psychoeducational program were excluded from this study.

Prior to the study, a parent or legal guardian had granted their written agreement, enabling respondents who participated in the study to do so. With a population of 104 students and an alpha level of 0.05, the Slovin formula was used to determine the minimum number of samples. 83 students were the required minimum sample size for this investigation. All those who satisfied the requirements for inclusion received invitations to participate, bringing the total sample for this study's 86 respondents, whose ages ranged from 12 to 15.

The topic of the psychoeducation was oral health during the COVID-19 pandemic. A definition of oral health, the significance of maintaining oral health, particularly during the COVID-19 pandemic, dental and oral diseases and disorders and their detrimental effects, risk factors for oral health, how to maintain oral health, particularly during the COVID-19 pandemic, and the use of teledentistry during the COVID-19 pandemic were all covered in the provided information. Presentation techniques are employed to deliver the psychoeducational procedures and Power Point media. Pre- and post-tests consisting of 15 questions were administered to respondents before and after psychoeducation as part of the evaluation, and each student's device was used to complete the forms using Google Forms. The score given for each correct answer on the questionnaire is 1 and the score for the wrong answer is 0.

The questionnaires given have passed the validity and reliability tests. Thirty respondents who weren't part of the research sample completed the study's questionnaire, and the results were statistically evaluated using SPSS 28. The test validity was assessed using the Pearson Moment Product (Pearson Bivariate Correlation). This analysis is made possible by correlating the scores of each item with the overall score. When a question item has a strong correlation with the overall score, it is an indication that it is valid. The instrument or question items are deemed genuine if r counts r table (sig. 0.05) indicates a substantial correlation between each item and the final score.

Based on a significance test of 0.05, a total of 15 questionnaire questions revealed a computed r value>r table. This research tool was in the form of a questionnaire, and the Alpha Cronbach formula, which was used to measure the instrument's reliability, revealed that the questionnaire item obtained a high alpha rating of 0.853, indicating strong reliability. A research questionnaire with 15 valid and reliable items was found based on the results of validity and reliability tests. In this study, descriptive statistics and a non-parametric Wilcoxon signed rank test were used to do additional statistical analysis on the collected data.

RESULTS

Pre-test results obtained through test results before intervention with psychoeducation and post-test results obtained after the subjects were given the intervention.

Table 1. Characteristics of respondents based on gender, age, and grade level.
Basic characteristics of participants (n=86)

Characteristics of Respondents	n (%)
Gender	
man	17 (19.8)
woman	69 (80.2)
Age (years)	
12	19 (22.1)
13	39 (45.3)
14	22 (25.6)
15	6 (7.0)
Class	
7	26 (30.2)
8	35 (40.7)
9	25 (29.1)

Table 1 shows the basic characteristics of the respondents. According to gender, the majority of respondents were female (80.2%). According to age, the bulk of respondents were 13 years old (45.3%).). The majority of respondents (40.7%) were in 8th grade.

Table 2. Differences between the mean pre-test and post-test results of the Wilcoxon signed rank test

	n	Mean	SD	Min	Max	*p*-value
Pre-test psychoeducation	86	9,64	2,726	3	15	0.001
Post-test psychoeducation	86	13,36	1,742	8	15	

With a minimum pre-test score of 3 and a maximum post-test score of 8, the descriptive statistical data in Table 2 illustrates the average score change for 86 respondents (n) before and after intervention with psychoeducational activities. The average pretest score was 9.64, and the post-test rating increased to 13.36. The results of the Wilcoxon signed rank test statistical test with values of $p = 0.001$ ($p < 0.05$) and significance level=0.05.

Table 3. Results of the Wilcoxon's signed rank test

		n	Mean Rank	Sum of Ranks
Post-test Psychoeducation	Negative Ranks	0	0.001	0.001
Pre-test Psychoeducation	Positive Ranks	80	40.50	3240.00
	Ties	6		
	Total	**86**		

Table 3 shows the results of the Wilcoxon test, namely the difference in knowledge before and after the intervention. There were 6 respondents with the results of knowledge before and after the intervention in a stable state, and 80 respondents had better knowledge than before the intervention. There were no respondents with lower knowledge after counseling than before counseling. Statistical examination of the Wilcoxon signed rank test findings revealed an improvement (positive ranks) from the average score, which increased by 40.5.

DISCUSSION

The results of the study at the time of the pandemic, from 86 respondents with an average age of 13 and a majority of women (80.2%), are shown in Table 1. The pre-test scores of 86 respondents (n) revealed an average (mean) of 9.64 and a minimum score of 3 (Table 2). In accordance with the study of Shim et al[1], which revealed that adolescents had the lowest score in terms of oral health knowledge, the study's findings suggest that it is important to increase adolescents' understanding of oral health. Knowledge is made up of a variety of facts and beliefs that help a person overcome the issues he encounters. Understanding knowledge in terms of both health and non-health starts to have an impact on development in adolescents.[18] Knowledge of infectious illnesses, variables affecting health, health care facilities, and accident prevention techniques are only a few examples of what is included in the category of "health knowledge."[18] Psychoeducation is providing information and education to increase someone's knowledge, which can be provided through methods such as providing information or lectures, discussions, and watching videos.[9]

The results of research by Coralia et al[9], showed that subjects who were given psychoeducation with these methods experienced an increase in knowledge. Nelson-Jones (1982) identified at least six definitions of psychoeducation, each corresponding to a specific movement, including some of the following: First, teach life skills to people. Psychoeducation is defined as an endeavor to assist individuals in acquiring a variety of life skills that they either lack entirely or need to improve. This will enable them to live life more successfully and maintain their physical and mental health. The development of life skills is accomplished through a variety of structured, group-based programs. Second, as a series of community service projects, the word "psychoeducation" is frequently used to refer to all activities that benefit society. This practice typically includes teaching life skills to diverse groups, including students.[12]

Lack of knowledge about oral health can be a predisposing factor in health attitudes and behaviors that lead to the onset of disease and poor behavior and attitudes towards the maintenance of oral and dental health.[18] Because deciduous teeth have been replaced by permanent teeth by the age of adolescence, it is vital to pay attention to tooth and mouth maintenance.[19] Oral health efforts are evaluated from a variety of perspectives, including the environment, knowledge, and education, which can help determine a person's oral health condition, which is a risk factor for behavior change.[19] Based on Narulita et al[19], the influence of dental health education increases knowledge, attitudes, and behavior among adolescents.

According to research done in 2021 by Brondani et al. on the impact of the COVID-19 pandemic on behavioral and psychosocial factors related to oral health in adolescents, during the pandemic, the frequency of brushing, the use of dental services, and the need for self-felt dental

care significantly decreased, and there were changes in sugar consumption.[13] Statistically significant differences were found for OHRQoL, stress, anxiety, and depression levels among respondents with a greater emotional load, equal to or less than before the pandemic, according to research done in 2022 on the impact of the COVID-19 pandemic on oral health and psychosocial factors by Ciardo et al.[14]

Table 2 shows that there was a change in the minimum value, which increased during the post-test, namely from 3 to 8, and the maximum value of 15 could still be achieved. The mean results of 86 respondents showed an increase, namely from 9.64 during the pretest to 13.36 during the post-test.

The study established on the psychoeducation program stated that it was effective and efficient in enhancing knowledge levels.[20] Psychoeducation can be individual, family, group, or community-based, depending on the target audience.[21] According to the study of Ilya et al[22], interventions in the form of psychoeducation boost respondents' awareness of dental and oral hygiene and lower their levels of stress. This is consistent with the study's findings, which indicated a major increase or significant increase after respondents received psychoeducation, respectively, with $p = 0.001$ ($p < 0.05$).

Due to Funnel's research, the right education will enable greater communication between the information provider and the information recipient, allowing for deeper and more effective learning.[23] The presentation strategy used in this study to was psychoeducation. A presentation or lecture is a prepared, structured, or one-way delivery of information from the speaker to the participants in the audience.[12]

The results of the Wilcoxon test (Table 2) to find out the difference in the level of knowledge before and after the intervention with the psychoeducational method obtained a significant value, which indicates that there is a significant difference in knowledge between before and after the intervention with the psychoeducational method. Psychoeducation in elementary school through junior high, high school, and further education focuses on at least three areas: academic success, personal-social growth, and job advancement. One of the three types of life skills in the personal-social domain is developing one's own understanding of one's physical and psychological components. In general, psychoeducational services in the area of personal-social development involve efforts to assist students, one of which is life skills like being able to keep oneself clean and keep one's physical health in good, regular shape, one of which is keeping one's oral health in good condition.[12]

According to the psychoeducation given, there was an interaction between dentists acting as informers and respondents acting as information recipients. The interaction process involved dentists presenting information via Zoom meetings to respondents or psychoeducation participants with Power Point media, as well as interactions during discussion (Q&A) sessions and icebreaker activities while reviewing previously delivered psychoeducational material. Presentations were supported by visual aids, including diagrams, pictures, and instructional videos. According to research by Fitri et al[24], the intervention was carried out online using Zoom meetings and illustrated stories, and they concluded that oral health education through online media was positively effective for youth.

The results in Table 3 show that after the intervention using the psychoeducational method, there was no lower knowledge value than before the intervention. This shows that psychoeducational methods can increase dental health knowledge. There were 80 respondents who had better knowledge than before the intervention, and only 6 respondents whose knowledge before and after the intervention remained constant.

The human brain is a biological and social organ that performs and processes functions connected to thinking, intuition, imagination, playfulness, action, writing, emotion, and awareness. It also responds to environmental changes. Every adolescent learns in a variety of ways, such as by reacting to situations and circumstances through stimuli, and he or she produces and seeks out new kinds of particular and linked processes.[17] The knowledge, attitudes, and habits of individuals have the greatest impact on their oral health. Knowledge, which refers to knowledge coupled with a disposition to behave in line with that knowledge and ultimately boils down to conduct, or actual action, is a very significant domain for establishing attitudes.[18]

According to the idea of Notoatmodjo, human perception of a certain item leads to knowledge. The five senses of the human body - sight, hearing, smell, taste, and touch - are used in the sensing process.[18] The American Dental Association's (ADA) educational movies on oral health were used to supplement the dentists' PowerPoint presentations of the study's information, which served as the audio and visual medium for psychoeducation. Respondents were able to get information about oral health thanks to the use of video media in this study. Additionally, because they have a lasting effect on audience members, audiovisual aids are a significant educational tool in the field of health education.[25]

There were research restrictions when performing the study. There was no control group, and only one group was employed in the research. This study did not compare increasing awareness of oral health with psychoeducational strategies because it only employed one intervention group without a control group. Because oral health psychoeducation was delivered in the afternoon, after pupils finished their schoolwork, the environmental conditions were less than ideal. Additionally, restricted room space results in restricted space between respondents, enabling respondents to cooperate or share information when completing questionnaires.

The researcher makes several recommendations for additional research based on the completed research activities. It is hoped that observations can be made over a longer period of time and in a favorable setting because the success of new health education can be gauged over a longer period of time. To further examine the effectiveness of psychoeducational strategies in enhancing knowledge, the control group can be utilized as a comparison. Sampling techniques and other treatments can also be employed as alternatives.

CONCLUSION

The intervention of psychoeducational methods regarding oral health education can increase knowledge in adolescents. Psychoeducational methods can help adolescents learn more about oral health.

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