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**EFFECTIVENESS OF HEALTH PROMOTION USING INSTAGRAM
 SOCIAL MEDIA TO INCREASE ORAL HEALTH LITERACY
 IN BANJARBARU SOUTH KALIMANTAN**

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ABSTRACT

Background: Banjarbaru is the city with the lowest percentage in the South Kalimantan region regarding knowledge the ease of access to dental health services. This shows an illustration of the importance of health promotion so that people are more aware of the importance of maintaining dental and oral health. One strategy to achieve optimal health promotion is to use health promotion methods through social media. Instagram social media as a health promotion media has the advantage of being easy to access without being constrained by distance, time, and cost. **Purpose:** Analyzing the effectiveness of health promotion using Instagram social media to increase oral health literacy in adolescents at SMP Negeri 1 Banjarbaru. **Methods:** This studies uses a true experimental design method with a pretest-posttest design with control design, the sampling technique is simple random sampling technique. The studies carried out at SMP Negeri 1 Banjarbaru with 92 respondents. **Results:** There is a difference in the oral health literacy pretest and posttest scores in interverence group, while in the control group there is no significant difference. The significance result of Mann Whitney test in the posttest session for the intervention and the control groups are $0.000 > 0.05$ which means that there is a significant difference in oral health literacy scores between the posttest scores of the intervention group and the control group. **Conclusion:** Health promotion using Instagram social media is effective for improving oral health literacy.

Keywords: Health promotion, oral health, oral health literacy, social media

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INTRODUCTION

Dental and oral health is one of the integral aspects among other aspects of body health. The World Health Organization (WHO) says that dental and oral health is an indicator of overall health, well-being, and quality of a person's life, so it is important to maintain for everyone including adolescents. Dental and oral health disorders can affect a person's quality of life due to the onset of discomfort, causing pain, disability, and even death.^{1,2} The high proportion rate of dental and oral problems can be influenced by behavioral factors of dental and oral health of people who do not realize and understand the importance of maintaining oral and dental health, one of which is caused by the habit of Indonesian people who tend to seek dental and oral clinicians after appearing the symptoms in the oral cavity, so most of the cases will end with a state of complex treatment of the oral cavity.^{3,4} Adolescents belong to the group that is prone to

dental and oral problems, this can be caused by a lack of knowledge, so dental and oral health behaviors in adolescents are not optimal.⁵ Evidenced by the existing data from Risesdas in 2018 which states the percentage of patients with dental and oral health problems in the population of South Kalimantan population aged 10-14 years was 59.56% and only 14.34% of the population receives dental and oral health care. The level of public knowledge regarding the ease of access to dental health services in Banjarbaru is the city with the lowest percentage in the South Kalimantan region, which is 28.70%. This shows the importance of health promotion in the community.⁶

One of the strategies of the Ministry of Health listed in the Minister of Health of the Republic of Indonesia No. 21 of 2020 is to improve the method or way of health promotion, through TV spots, leaflets, booklets, social media, and so on.⁷ Data from the Indonesian Internet Service Providers

Association said the number of active users of social media in Indonesia reached 171.17 million people with the highest number of users aged 12-24 years.⁸ According to Hootsuite (We Are Social) data, Instagram social media users in Indonesia make up 86.6% of the overall population in Indonesia.⁹ Aspects of human life such as economics, politics, art and culture, the world of education including the medical world can be facilitated with the help of technology.¹⁰ Health promotion through Instagram social media is a potential for marketing and disseminating information quickly because it can overcome the limitations of distance, time, and cost.¹¹ An individual's ability to understand and use dental and oral health information to change dental and oral health behaviors, can be assessed with the Oral Health Literacy (OHL) questionnaire. OHL score categories can be distinguished into high, moderate, and low. According to research, a high OHL score will affect people's willingness to see a dentist, then it can improve and maintain the health of their teeth and mouth.^{2,3} The purpose of this study was to analyze the effectiveness of health promotion using Instagram social media to increase oral health literacy.

RESEARCH METHODS

This study uses the true experimental design method with a pretest-posttest with control design which has been declared ethically feasible by the Health Research Ethics Commission of the Faculty of Dentistry, University of Lambung Mangkurat with No. 042 / KEPKG-FKGULM / EC / IV / 2022. The population in this study was 925 students of SMP Negeri 1 Banjarbaru and the sample used was 92 respondents. Sampling technique with simple random sampling technique. The study respondents were divided into two groups, namely 46 respondents of the intervention group and 46 respondents of the control group.

Respondents were first given an explanation of the study and an informed consent sheet to seek approval, after which the respondent's oral health literacy initial score (pretest) was measured with Health Literacy in Dentistry questionnaire in the intervention group and control group. The next step is to carry out health promotion using videos uploaded on Instagram social media for two weeks in the intervention group. After two weeks, respondents' oral health literacy final scores (posttest) were again measured in the intervention group and control group. The data obtained from the study were then analyzed using univariate analysis and bivariate analysis, bivariate analysis using the Wilcoxon test and the Mann Whitney test.

RESULT

This research was conducted in April-May 2022 at SMP Negeri 1 Banjarbaru, online using Instagram social media with the following description of the respondents.

Table 1. Gender of Respondents

Gender	Frequency	
	N	%
Woman	64	69,60
Man	28	30,40
Total	92	100

Table 1 shows that the respondents in this study were dominated by the female sex as many as 64 people (69.60%).

Table 2. Age of Respondents

Age	Frequency	
	N	%
12 Years	13	14,10
13 Years	31	33,70
14 Years	36	39,10
15 Years	12	13,10
Total	92	100

Table 2 shows respondents in this study are in the range of 12-15 years. The most respondents were 14-year-old students, namely 36 people (39.10%) and the fewest respondents in this study were 15-year-old students, namely 12 people (13.10%).

Table 3. Respondent Class

Class	Frequency	
	N	%
VII	35	38,10
VIII	37	40,20
IX	20	21,70
Total	92	100

Table 3 shows that the most respondents in this study came from class VIII, namely 37 people (40.20%) and the least respondents came from class IX, namely 20 people (21.70%).

Univariate Analysis

The oral health literacy score was obtained from the results of the Health Literacy in Dentistry questionnaire that had been filled out.

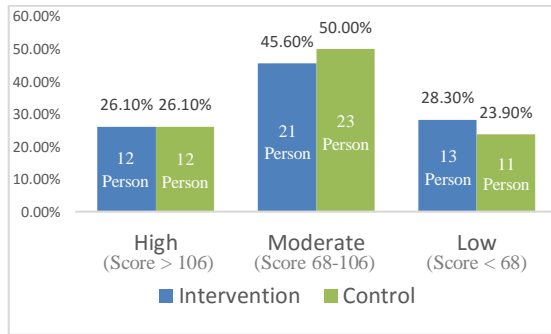


Figure 1. Bar Chart Distribution of Oral Health Literacy Pretest Score Criteria Intervention Group and Control Group

Figure 1 shows that the results of high criteria in the intervention group and control group obtained the same number of 12 respondents, the results of the moderate criteria were more found in the control group, namely 23 respondents and the results of the low criteria were more found in the intervention group, namely 13 respondents.

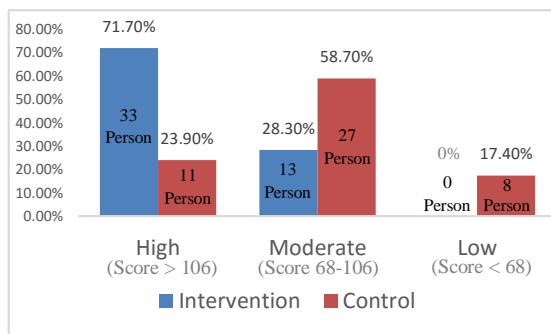


Figure 2. Bar Chart Distribution of Oral Health Literacy Posttest Score Criteria Intervention Group and Control Group

Figure 2 shows that the results of the high criteria were more found in the intervention group, namely 33 respondents, the results of the moderate criteria were more found in the control group, namely 27 respondents and the results of the low criteria were more found in the control group, namely 8 respondents.

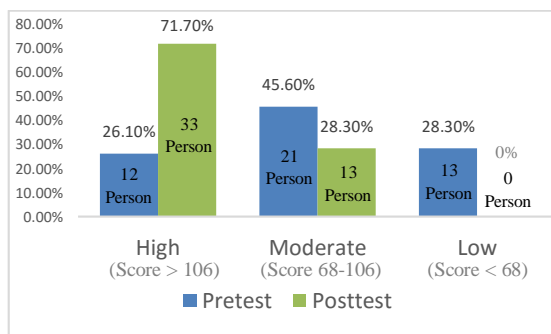


Figure 3. Bar Chart Comparison of Oral Health Literacy Pretest Score Criteria and Posttest Score Criteria Intervention Group

Figure 3 shows that originally only 12 respondents increased to 33 respondents with high criteria, then in the low criteria that were originally obtained by 13 respondents decreased to not getting respondents with low criteria in the posttest results of the intervention group.

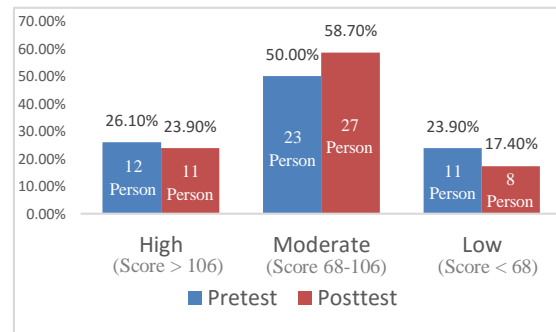


Figure 4. Bar Chart Comparison of Oral Health Literacy Pretest Score Criteria and Posttest Score Criteria Control Group

Figure 4 shows a decrease in the high criteria which was originally obtained by 12 respondents to 11 respondents and in the moderate criteria a slight increase was obtained which was originally obtained by 23 respondents to 27 respondents.

Bivariate Analysis

Researchers analyzed the data using the SPSS (Statistical Package for the Social Science) program.

Table 4. Wilcoxon Analysis Test Results of The Intervention Group

Pre - Post	N	Mean Rank	p value
Negative Ranks	2	10,00	0,000
Positive Ranks	44	24,11	
Ties	0		
Total	46		

According to the Wilcoxon test in table 4, the negative difference between pretest and posttest were 2 respondents, positive differences between pretest and posttest were 44 respondents. The significance results in the Wilcoxon test of the intervention group were $0.000 < 0.05$ ($p < 0.05$), which means that there is a difference in oral health literacy scores between before and after health promotion.

Table 5. Wilcoxon Analysis Test Results of The Control Group

Pre - Post	N	Mean Rank	p value
Negative Ranks	12	24,17	0,106
Positive Ranks	28	18,93	
Ties	6		
Total	46		

Wilcoxon test results in table 5 show negative differences between pretest and posttest are 12 respondents, positive differences between pretest and posttest are 28 respondents, ties results between pretest and posttest were 6 respondents. The significance results in the Wilcoxon test of the control group were $0.106 > 0.05$ ($p > 0.05$), which means that there was no significant difference between the oral health literacy pretest and posttest scores.

Table 6. Results of the Mann Whitney Analysis Test of The Intervention and Control Group

Oral Health Literacy	
p value	0,000

Table 6 shows that the significance of the Mann Whitney test on the posttest scores of the intervention group and the control group was $0.000 < 0.05$ ($p < 0.05$), which means that there was a significant difference in oral health literacy scores between the posttest scores of the intervention group and the control group.

DISCUSSION

Oral Health Literacy Pretest Scores of Intervention Group and Control Group

According to Rachmawati (2019), a person's knowledge can be influenced by several factors such as education, information, interests, curiosity, experience, culture, and memory.¹² In this study, the results of the oral health literacy score criteria were obtained by only 12 adolescents (26.1%) who had scored with high criteria in each group. The results of this study are in accordance with Dutra's research (2019) which said that only 29.4% of adolescents had oral health literacy scores with high criteria.¹³ The low score of oral health literacy in adolescents is due to the lack of promotion of dental health to adolescents as the underlying knowledge of respondents to answer pretest.¹⁴ Reinforced by Safitri (2016), the factor that most influences the knowledge of a person entering adolescence is the emergence of curiosity towards information, so that this problem can be minimized by the existence of

health promotion that is easily accessible by adolescents to increase their knowledge.¹⁵

Oral Health Literacy Posttest of Intervention Group and Control Group

Health promotion is a process that seeks individuals or communities to control and improve their health.¹⁶ According to Febriantika (2017) there are several factors that influence the success of health promotion delivery such as methods, materials, and media that must run side by side in the goal of achieving maximum health promotion goals. The success of health promotion delivery is evidenced by changes in knowledge and attitudes, so that it can trigger changes in behavior.¹⁷ At this time, health promotion media can be developed using social media as a means to convey the information that health promotion extension workers want to convey online, so in this study interventions in the form of health promotion were carried out with Instagram media.¹¹

The results showed that there were differences in score results in the intervention group. Evidenced by the increase in the results of oral health literacy scores, from which originally only 12 adolescents (26.1%) had scores with high criteria, to 33 adolescents (71.7%). After health promotion was carried out, no adolescents in the intervention group in this study received a score with low criteria. Health promotion media factors affect results through the effectiveness of Instagram social media which can display health promotion materials in the form of videos and disseminate without being limited by distance, time, place, and cost.^{8,11} In addition to this, Instagram social media can take advantage of more than one human sense by displaying audiovisual content, making it easier for respondents to understand health promotion materials.¹⁸ The results of the study proved that the intervention was successful in improving respondents' oral health literacy scores. This is in line with research by Prasetya (2019), namely the influence of social media on increasing the posttest score of knowledge in the prevention of dental stains in the intervention group.¹⁹ Tisa (2020) said the increase in posttest scores in the intervention group occurred because respondents had been equipped with knowledge from health promotion video interventions.¹⁴

Control group in this study did not receive any intervention. The results of the control group posttest obtained three types of changes in respondents' scores. First, a decrease in the results of the oral health literacy score criteria were originally 12 adolescents (26.1%) who had scores with high criteria to 11 adolescents (23.9%) who had scored with high criteria, this was caused by a memory system with limited capacity (short term

memory), thus having an impact on decreasing the value of posttest.²⁰ Second, it was found that the control group respondents did not experience changes in the posttest score, this was influenced by several factors, including: the non-intervention of the respondents and the curiosity of the respondents who did not increase after being given the pretest.¹² Thirdly, there was an increase in the results of the moderate criteria which was originally 23 adolescents (50%) to 27 adolescents (58.7%), this is in accordance with the research of Sujatha (2019) which said in a general study it happened that respondents were aware when being observed in a study, so that it would change their normal knowledge in a positive direction, this is called the Hawthorne effect.²¹

Comparison of Oral Health Literacy Pretest and Posttest Scores of Intervention Groups

The significance results in the Wilcoxon test of the intervention group were $0.000 < 0.05$ ($p < 0.05$), which means that there is a difference in oral health literacy scores between before and after health promotion using videos uploaded to Instagram social media. The video availability can make respondents focus on the health promotion material provided due to changes in movement in the video and provide an opportunity for respondents to watch the health promotion material repeatedly to increase their understanding. This proves that Instagram social media is effective in improving oral health literacy scores. The results of this study are in line with research conducted by Rahayuni (2021) which states that there are differences in the knowledge of toddler caregivers before and after being given health promotion with educational video media.²²

Comparison of Oral Health Literacy Pretest and Posttest Scores of Control Groups

Wilcoxon's test results showed that the significance of the control group was $0.106 > 0.05$ ($p > 0.05$), which means that there was no significant difference between the oral health literacy pretest and posttest scores. The results of this study are in accordance with the results of Andriani's research (2020), namely there is no difference between the pretest and posttest values of handwashing compliance in the control group that is not given health promotion treatment.²³ The results of this study are also in line with Prasetya's research (2019) that there was no significant difference between pretest and posttest results on increasing knowledge about dental stain prevention without the provision of social media interventions in the control group.¹⁹ The absence of an increased posttest score in the control group was due to the absence of any intervention, so the respondent's knowledge was

still the same as the knowledge at the time of the pretest.¹⁴

Effectiveness of Health Promotion using Instagram Social Media to Increase Oral Health Literacy

The significance of Mann Whitney test on the posttest scores of the intervention group and the control group was $0.000 < 0.05$ ($p < 0.05$), which means that there was a significant difference in oral health literacy scores between the posttest scores of the intervention group and the control group. The results of this study are in line with Mediana's research (2018) stating that there is a significant difference between the knowledge and attitudes of overweight adolescents before and after being given educational videos.²⁴ Based on Rustandi's research (2019), people who watch videos will be able to remember 50% of what they see and hear.²⁵ Video can explain material realistically, and can be repeated and stopped as needed, thus providing greater success compared to other media in facilitating the absorption of information and increasing knowledge.²² According to Susanti's research (2018), an effective and interesting video design as a learning medium is a video that pays attention to the duration of 3-10 minutes, uses image backgrounds, uses text, uses illustrations, easy-to-understand material, uses language that is easy to understand, speech tempo that is not too fast and provides interactive questions in the video.²⁶ The increase in oral health literacy scores in the intervention group was followed by the provision of interventions in the form of videos uploaded using the Instagram social media Instagram TV feature. The features available on the Instagram application can be used by its users as a medium of interaction and get information quickly, easily, and cheaply.^{11,27}

From the results of data analysis in this study, it can be concluded that health promotion using Instagram social media is effective in increasing oral health literacy. Based on the description above, Instagram social media and audiovisual media such as video can be used as an alternative in providing dental and oral health promotion.

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