Can Instagram and TikTok Improve Student's Knowledge about MonkeyPox in Digital Health Communication?

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ABSTRACT

This study aims to provide an overview of student's knowledge levels regarding Monkeypox before and after receiving education through social media platforms Instagram and TikTok. Monkeypox is an infectious disease of global concern, making comprehensive understanding crucial, particularly among adolescents who actively use social media as a primary source of information. This research employs a quantitative descriptive design with a survey approach. The sample consists of 120 10th grade students from SMA Negeri 9 BINSUS Manado who participated in Monkeypox education through Instagram and TikTok. Data were collected using pre-test and post-test questionnaires to assess students' knowledge levels before and after the intervention. The results of the knowledge distribution analysis indicate a significant increase in students' knowledge after receiving education via social media. Most students who initially had a low level of knowledge experienced an improvement after being exposed to interactive and visually engaging content on Instagram and TikTok. This improvement highlights the role of social media as an effective health education tool in disseminating information about infectious diseases such as Monkeypox. The findings of this study affirm that social media can serve as a strategic digital health communication platform to enhance adolescent awareness of health issues. Given the accessibility and engaging nature of social media, health information can be disseminated more widely and effectively. Further research is recommended to explore the effectiveness of different content types and social media platforms in supporting digital-based health education initiative.

***Keywords**: MonkeyPox, Health Education, Social Media, Knowledge, Digital Communication*

1. INTRODUCTION

Monkeypox is a zoonotic infectious disease that has gained global attention since its cases spread to various non-endemic countries. The World Health Organization (WHO) declared Monkeypox as a Public Health Emergency of International Concern (PHEIC) in July 2022 due to a significant increase in cases. The spread of this disease requires an effective health education strategy to enhance public understanding, particularly among adolescents who are vulnerable to misinformation related to infectious diseases.

With the rapid advancement of digital technology, social media has become a primary medium for disseminating health information. Platforms such as Instagram and TikTok are increasingly used as health education tools due to their engaging and accessible formats. Adolescents, as primary users of social media, have great potential to acquire more accurate health information through social media-based educational content. Therefore, utilizing social media for Monkeypox education is crucial to examine its effectiveness in improving students' knowledge.

This study aims to describe the level of students' knowledge before and after receiving education about Monkeypox through social media. Using a descriptive quantitative approach, this study analyzes the distribution of students' knowledge before and after the educational intervention via Instagram and TikTok. The findings of this study are expected to provide insights into the role of social media in health education and serve as a reference for developing more effective digital health communication strategies for students. The use of social media by health educators and students showed that more than half of the participants in Saudi Arabia used it to raise health awareness. They believed that this platform is an effective tool in disseminating information, increasing understanding, and encouraging healthy living habits (Mohammed et al., 2021).

Students refer to individuals who follow an educational process, either at a formal level such as school or college. They play an active role in learning activities by interacting with teachers and peers to achieve the learning objectives that have been set. Based on the Regulation of the Minister of Education and Culture (Permendikbud) No. 1 of 2021, students include children from various levels of education, from kindergarten to higher education (Kamaliah, 2021).

2. RESEARCH METHODOLOGY

This study employs a descriptive quantitative research approach. Data collection was conducted using a one-time approach, where subjects took a pre-test before receiving education through Instagram and TikTok, followed by a post-test after the educational intervention. The sampling technique used in this study is proportional sampling.

The primary data source used in data collection was a knowledge questionnaire on Monkeypox, which covered aspects such as definition, epidemiology, transmission, and prevention.

The population in this study consisted of 10th-grade students at SMA Negeri 9 BINSUS Manado, with an average age of 13–16 years, distributed across nine classes, totaling 339 students. The study sample comprised 120 students, determined using the Lemeshow formula for sample size calculation.

$$n = \frac{N \times Z^2 \times p \times (1-p)}{e^2 \times (N-1) + Z^2 \times p \times (1-p)}$$

$$n = \frac{339 \times (1{,}96)^2 \times 0{,}5 \times (1-0{,}5)}{(0{,}05)^2 \times (339-1) + (1{,}96)^2 \times 0{,}5 \times (1-0{,}5)}$$

$$n = \frac{339 \times 3{,}8416 \times 0{,}5 \times 0{,}5}{0{,}0025 \times 338 + 3{,}8416 \times 0{,}5 \times 0{,}5}$$

$$n = \frac{325{,}5756}{0{,}845 + 0{,}9604} = \frac{325{,}5756}{1{,}8054} = 180{,}3 = \underline{\mathbf{180}}$$

Division of samples from the total sample into three groups, using the proportional sampling method with calculations

$n_x = (N_x/N) \times n$

$n1 = (36/339) \times 180 = 19{,}11 = 19$

$n2 = (36/339) \times 180 = 19{,}11 = 19$

$n3 = (35/339) \times 180 = 18{,}58 = 19$

$n4 = (38/339) \times 180 = 20{,}17 = 20$

$n5 = (38/339) \times 180 = 20{,}17 = 20$

$n6 = (40/339) \times 180 = 21{,}23 = 21$

$n\bar{x} = n1 + n2 + n3 + n4 + n5 + n6 = 19 + 19 + 19 + 20 + 20 + 21 = 118 = 120$

with a total sample size of 118 divided into three groups of students and rounded up to 120 with each group being 40.

3. RESULT AND DISCUSSION

3.1 Demographic Characteristics of Respondents

As part of the education system, learners have the right to learn in an environment that supports their cognitive, social, and emotional growth, along with the development of technology in the world of education, such as digital learning, learners are also expected to utilize various digital platforms to support their learning process. This phenomenon is increasingly relevant in the context of educational communication and health promotion in the digital era. The results of this study, conducted on 120 respondents who are 10th-grade students at SMA Negeri 9 BINSUS Manado, provide an overview of the distribution of respondents' demographic characteristics, which include gender and age.

Table 1. Demographic Characteristics of Respondents

Characteristics	Frequency	Percent (%)
Gender		
Male	44	36.7
Female	76	63.3
Total	**120**	**100**
Age		
13	1	0.8
14	23	19.2
15	82	68.3
16	13	10.8
17	1	0.8
Total	**73**	**100**

Table 1 presents the characteristics of respondents in this study. There were 76 female respondents (36.7%), which constituted the majority, and 44 male respondents (63.3%). Additionally, 82 respondents (68.3%) were aged 15 years, making up the largest age group, followed by 23 respondents aged 14 years (19.2%), 13 respondents aged 16 years (10.8%), and one respondent each

aged 13 and 17 years (0.8%). This distribution indicates that most students fall within early adolescence, which aligns with the target population vulnerable to digital health information.

This finding is consistent with research indicating that social media platforms such as Instagram, Facebook, and Twitter are frequently used by students to seek health-related information. Around 72% of adolescent social media users search for health information on these platforms, with videos and images being the most engaging formats for them (Norris, 2020). Also age affects a person's comprehension and mindset. The older one gets, the more developed one's comprehension and mindset will be and the knowledge one gains will improve (Notoatmodjo, 2014).

The ability of students in their ages which means teenages to adapt to various technological tools is key to ensuring the success of learning in this digital era. As a result, students can become more independent, creative learners, and ready to face challenges in society. Education in the Society 5.0 era requires teachers to have digital skills or competencies. Integrating technology into learning activities requires adequate skills in its use. Teachers can utilize various references from digital platforms to support creative learning (Hayati, 2024).

3.2 Overview of Student's Knowledge

Students' knowledge of Monkeypox was measured using an interval-scale questionnaire conducted twice, before and after education through Instagram and TikTok.

Table 2. Overview of Student's Knowledge Before and After Monkeypox Education

Category	Pre-Test		Post-Test		Explanation
	n	%	n	%	
Good	81	67.5	113	94.2	Increase
Bad	39	32.5	7	5.8	
Total	120	100.0	120	100.0	Achieved

According to the research findings in Table 2, prior to the education intervention there is students with good knowledge 81 respondents (67,5%), and students with bad knowledge 39 respondents (32,5%). After the intervention through social media education on Instagram and TikTok, a improvement was observed with 113 respondents (94,2%) demonstrated good knowledge, and only 7 respondents (5,8%) still had **insufficient knowledge.**

The findings indicate a meaningful increase in students' knowledge about Monkeypox before and after the intervention, demonstrating that Instagram and TikTok effectively deliver health education. Knowledge is the result of an individual's awareness of a particular object gained through sensory perception, including vision, hearing, smell, taste, and touch (Rahmawati & Agustin, 2020). Most human knowledge is acquired through sight and hearing. This aligns with research findings stating that social media platforms can enhance students' understanding of health issues through visual and interactive approaches.

Disseminating information through social media has an important role in increasing public health awareness. In particular, Instagram can not only be used to share photos, videos, and writings, but is also recommended by researchers as a platform for discussion and education (Olga, 2022). Participant's understanding increased regarding the importance of social media, which not only functions as entertainment, but can also be used as a means of health promotion for the community. This education was provided in response to the lack of knowledge and understanding of local residents about other benefits of social media, especially TikTok (Micko, 2022).

3.3 Monkeypox Educational Content through Social Media

In the study of digital health communication, health messages are conveyed using social media as a health promotion tool to educate students. This study utilized two social media platforms that is Instagram and TikTok.

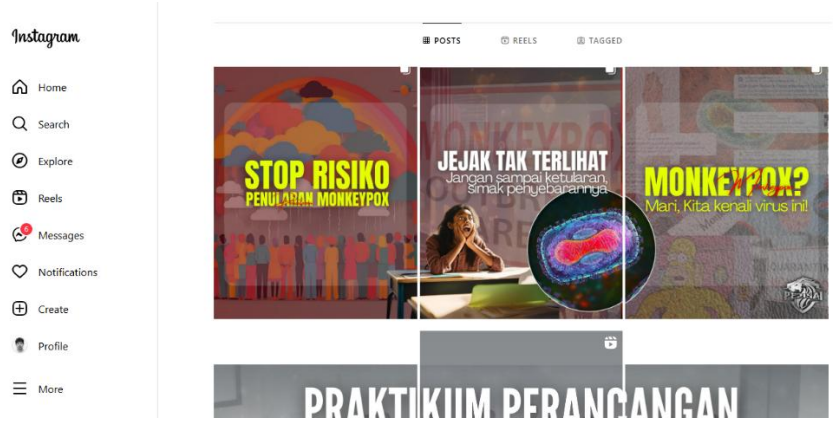

Figure 1. Monkeypox Educational Content through Instagram

Figure 1 illustrates multiple posts containing information on the definition, epidemiology, transmission, and prevention of Monkeypox. Educational content delivered through Instagram can improve knowledge due to the researcher's creativity in designing engaging content that captures the attention of students within the context of digital health communication. The content shared on Instagram enables broader reach and accessibility, as students are generally familiar with the platform.

In the study of Abdurrahman it was proven that the better the health promotion, the better the consumer attention and the better the purchase interest (Abdurrahman *et al., 2023*). Similarly, the better the health promotion design, the better the students' attention to education through Instagram, and the better the students' knowledge of education about monkeypox provided through Instagram

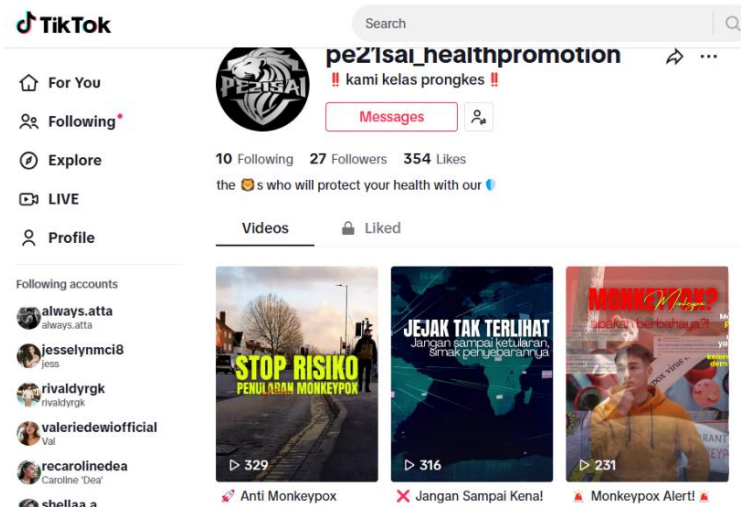

Figure 2. Educational Content about Monkeypox on TikTok

More interactive educational content, as seen in Figure 2, is presented in the form of educational videos covering the definition, epidemiology, transmission, and prevention of Monkeypox. Social media serves as an effective tool for health promotion among adolescents, enhancing health literacy, treatment adherence, and participation in health decision-making. Concise and clear message delivery prevents students from feeling bored while using social media in an educational context (Rabindra & Mutiara, 2024). Social media can be utilized as a medium for health promotion in digital health communication, as the findings indicate that it significantly improves student's knowledge. In the context of health promotion, this activity attracts attention and curiosity, leading to greater engagement in seeking knowledge.

TikTok can be one of the platforms that can be used to conduct online campaigns such as the hashtag hand washing movement. Therefore, online media is very much needed as a means of communication and also as a means of entertainment (Asrat & Kalaloi, 2022). With various features, it can certainly provide an increase in student's knowledge.

4. CONCLUSION

Based on the research findings regarding the use of Instagram and TikTok in increasing students' knowledge about Monkeypox in digital health communication, it can be concluded that students' knowledge significantly improved after receiving educational interventions on Monkeypox through these social media platforms

5. RECOMMENDATIONS

The recommendations derived from this study are as follows:

a. Students should utilize social media as a source of health education to enhance their knowledge and stay informed about current health issues.
b. Future research should aim to achieve more significant improvements and analyze differences between educational groups to determine the effectiveness of various social media platforms in health education.

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