

## The Influence of Social Media as a Health Promotion Tool for Dengue Fever Prevention

### Pengaruh Media Sosial sebagai Media Promosi Kesehatan untuk Pencegahan Demam Berdarah Dengue

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#### ABSTRACT

Dengue fever tends to increase and spread more widely. Based on data recorded by the Kendari City Health Office, a total of 1,689 people were affected by dengue fever, and 12 people died. The purpose of this study was to determine the effect of using social media as a means of health promotion in the prevention of dengue fever among students at Kendari 2 Public Vocational School. The design used was a one-group pretest-posttest design. The population in this study consisted of 439 students, with a sample size of 81 students selected using simple random sampling. The data were analyzed using univariate and bivariate analysis using the McNemar test. The data were presented in tables and narratives. The results of the analysis showed that social media as a means of health promotion had an effect on increasing students' knowledge and attitudes towards dengue fever prevention (p-value = 0.000). In conclusion, social media has an effect as a means of health promotion to increase students' knowledge, attitudes, and actions towards dengue fever prevention. It is hoped that social media can be used as a means of health promotion to increase students' knowledge, attitudes, and actions towards dengue fever prevention.

**Keywords:** Social media, knowledge, attitudes, actions, dengue fever incidence

#### ABSTRAK

Penyakit DBD cenderung meningkat dan semakin luas penyebarannya. Berdasarkan data yang tercatat oleh Dinas Kesehatan Kota Kendari, total yang terkena DBD sebanyak 1689 orang, dan yang meninggal sebanyak 12 orang. Tujuan penelitian ini untuk mengetahui pengaruh penggunaan media sosial sebagai sarana promosi kesehatan dalam pencegahan DBD pada siswa SMK negeri 2 Kendari. Rancangan yang digunakan adalah One Group Pretest-Posttest Design. Populasi dalam penelitian ini sebanyak 439 siswa dengan jumlah sampel 81 siswa yang diambil secara simple random sampling. Data dianalisis menggunakan analisis univariat dan bivariat menggunakan uji McNemar. Data disajikan dalam bentuk tabel dan narasi. Hasil analisis menunjukkan ada pengaruh media sosial sebagai sarana promosi kesehatan untuk meningkatkan pengetahuan dan sikap siswa terhadap pencegahan demam berdarah dengue (p-value=0,000). Kesimpulannya Ada pengaruh media sosial sebagai sarana promosi Kesehatan untuk meningkatkan pengetahuan, sikap dan tindakan siswa terhadap pencegahan DBD. Diharapkan menggunakan media sosial sebagai sarana promosi kesehatan untuk meningkatkan pengetahuan, sikap dan tindakan siswa terhadap pencegahan demam berdarah dengue.

**Kata Kunci:** Media sosial, pengetahuan, sikap, tindakan, kejadian DBD

#### Article Info:

Received: 14 August 2025 | Revised form: 15 Oct'2025 | Accepted: 3 Dec' 2025 | Published online:December 2025

## INTRODUCTION

Health is a human right and a vital investment in the quality of life for individuals, families, communities, and the nation. Maintaining good health improves quality of life, productivity, economic well-being, and social power. Therefore, it is important to strive for health improvement through healthy lifestyles, regular checkups, vaccinations, mental health maintenance, and creating healthy environments.<sup>1</sup>

Currently, dengue fever (DHF) is attracting national and international attention. In early 2024, over 14 million dengue fever cases and more than 10,000 dengue fever-related deaths were reported worldwide.<sup>2</sup> Dengue fever is currently endemic in over 100 countries, primarily in the Americas, Southeast Asia, and the Western Pacific. Asia accounts for 70% of the global dengue fever burden. In 2023, over 80 countries recorded more than 6.5 million cases and 7,300 deaths, the highest number in recorded history.<sup>3</sup>

According to the Indonesian Ministry of Health, as of May 22, 2024, East Java had the highest number of dengue fever cases, at 25,819 per 100,000 people, with 204 deaths. Central Java had 20,511 cases per 100,000 people, with 120 deaths; West Java had 17,291 cases per 100,000 people, with 92 deaths; Jakarta had 7,432 cases per 100,000 people, with 43 deaths; South Kalimantan had 6,511 cases per 100,000 people, with 37 deaths; and South Sulawesi had 5,630 cases per 100,000 people, with 33 deaths. had 5,051 cases and 29 deaths; Bali had 3,933 cases and 22 deaths; West Sumatra had 3,211 cases and 19 deaths; and West Kalimantan had 2,751 cases and 16 deaths.<sup>4</sup>

In 2023, there were 674 cases of dengue fever in Southeast Sulawesi Province, resulting in 10 deaths (an incidence rate of 24.6 per 100,000 people and a case fatality rate of 1.5%). The dengue fever morbidity rate in 2022 was 49 per 100,000 people. Kendari City had the highest number of cases (230).<sup>5,6</sup>

Based on data recorded by the Kendari City Health Office, 1,689 people were infected with dengue fever and 12 people died. Based on data from the Perumnas Community Health Center, 133 people were infected with Dengue Hemorrhagic Fever (DHF) from January to June 2024.<sup>7</sup>

Health promotion has the potential to significantly impact societal knowledge.<sup>8</sup> social media is now a vital tool for disseminating knowledge, raising awareness, and improving health habits.<sup>9</sup> It can help health educators and students effectively educate the public.<sup>10</sup>

In the initial observation conducted at SMKN 2 Kendari, located at Jalan Jenderal Ahmad Yani No. 13, Kadia Village, Kadia District, Kendari City. The results of the initial observation revealed that student awareness at SMKN 2 Kendari is still low. This is due to a lack of knowledge about DHF and how to prevent it, a lack of awareness about the importance of maintaining environmental cleanliness, a lack of education and socialization about DHF, and a lack of active participation in DHF prevention activities. While it is known that students use social media quite frequently, there is variation in the types of social media most frequently accessed. Some students are more active on TikTok. The aim of this research is to determine the influence of social media as a means of health



promotion in preventing dengue fever.

## MATERIALS AND METHODS

This study uses social media as a means of health promotion in a pre-experimental design. The One Group Pretest-Posttest Design was used, which includes a pre-test before treatment is administered. The study was conducted from June to July 2025 at SMKN 2 Kendari. The study population consisted of all 439 SMKN 2 Kendari students. The sample size was 81 students. The sampling technique used was simple random sampling. Data were analyzed using univariate and bivariate analyses with the McNemar test. The data are presented in tabular and narrative form.

## RESULTS

The following presents the research findings on the characteristics of the respondents and the frequency distribution of students' knowledge and attitudes before and after the intervention. It also illustrates the differences in pre-test and post-test scores among SMK Negeri 2 Kendari students through bivariate analysis.

**Table 1. Distribution of Respondent Characteristics Based on Gender and Age of Students of SMKN 2 Kendari**

| Respondent Characteristics | n         | %          |
|----------------------------|-----------|------------|
| <b>Gender</b>              |           |            |
| Man                        | 35        | 43.2       |
| Woman                      | 46        | 56.8       |
| <b>Age (Years)</b>         |           |            |
| 15                         | 18        | 22.2       |
| 16                         | 28        | 34.6       |
| 17                         | 25        | 30.9       |
| 18                         | 10        | 12.3       |
| <b>Total</b>               | <b>81</b> | <b>100</b> |

Source: Primary Data, 2025

Table 1 shows the characteristics of the

respondents. The table shows that of the 81 respondents, 56.8% were female and 43.2% were male. It also shows that 28 respondents (34.6%) were 16 years old, the largest age group, and 10 respondents (12.3%) were 18 years old, the smallest age group.

**Table 2. Frequency Distribution based on Knowledge and Attitude of Students of SMKN 2 Kendari**

| Variables        | Pre-Test  |            | Post-Test |            |
|------------------|-----------|------------|-----------|------------|
|                  | n         | %          | n         | %          |
| <b>Knowledge</b> |           |            |           |            |
| Poor or Fair     | 39        | 48         | 3         | 4          |
| Good             | 42        | 52         | 78        | 96         |
| <b>Attitude</b>  |           |            |           |            |
| Negative         | 38        | 47         | 6         | 7          |
| Positive         | 43        | 53         | 75        | 93         |
| <b>Total</b>     | <b>81</b> | <b>100</b> | <b>81</b> | <b>100</b> |

Source: Primary Data, 2025

Table 2 shows the results of the univariate analysis. It shows that, before being given the intervention, 39 of the 81 students (48%) were in the bad category, while 42 (52%) were in the good category. After receiving the intervention, three respondents were in the poor category (4%), while 78 were in the good category (96%). Table 2 also shows students' attitudes before receiving the intervention. From 81 respondents, 38 were in the poor category (47%), while 43 were in the good category (53%). After receiving the intervention, 6 respondents (7%) were in the bad category, while 75 respondents (93%) were in the good category.

**Table 3. Bivariate Analysis**

| Variables        | Mean    | P-Value |
|------------------|---------|---------|
| <b>Knowledge</b> |         |         |
| Pre-Test         | 54.8148 | 0,000   |
| Post-Test        | 81.8519 |         |
| <b>Attitude</b>  |         |         |
| Pre-Test         | 54.6914 | 0,000   |
| Post-Test        | 81.3580 |         |

Source: Primary Data, 2025



Table 3 describes the bivariate analysis. Based on the results of the McNemar statistical test, the average value of student knowledge before receiving the social media intervention was 54.8148, while the average value after receiving the intervention was 81.8519. A significant value of  $0.00 < 0.05$  was obtained, so  $H_0$  can be rejected and  $H_a$  can be accepted. This means that social media significantly influences the promotion of health to increase student knowledge of preventing dengue fever.

Table 3 also shows that, based on the results of the McNemar statistical test, the average student attitude score before receiving the social media intervention was 54.6914, while the average score after receiving the intervention was 81.3580. A significant value of  $0.00 < 0.05$  was obtained, so  $H_0$  is rejected and  $H_a$  is accepted. This means that social media has a significant influence on improving students' attitudes toward preventing dengue fever.

## DISCUSSION

Dengue Hemorrhagic Fever (DHF) is an infectious disease that poses a significant public health threat in Indonesia, particularly in tropical regions. DHF cases often increase during the rainy season and affect people of productive age, including adolescents and students.<sup>11</sup> The low level of knowledge about DHF among adolescents, especially high school students, can be a significant risk factor for the spread of this disease. Therefore, health education and promotion are crucial to increasing their knowledge and awareness.<sup>12</sup>

The results of the study showed a significant increase in knowledge regarding DHF prevention among SMK 1 students after receiving a health promotion intervention. The average knowledge score of students increased from 54.8 in the pretest to 81.8 in the posttest. Statistical tests showed a significant difference in knowledge before and after counseling.

This improvement demonstrates that the health education provided enhanced students' understanding of dengue fever prevention aspects, such as recognizing early symptoms, understanding how the dengue virus is transmitted by the *Aedes aegypti* mosquito, and the importance of implementing the 3M Plus method (draining, covering, and recycling used items). These findings support the theory put forward by Tokan and Artama (2022), which states that knowledge is a very important factor in shaping health behavior.<sup>13</sup>

Knowledge can change through learning, direct experience, and educational interventions. The more knowledgeable a person is, the more likely they are to have positive attitudes and behaviors regarding health issues.<sup>14</sup>

Furthermore, the effectiveness of health education is influenced by the delivery method. In this study, the material was delivered via social media and supported by interactive discussions. This combination of methods has been shown to increase adolescents' attention, absorption, and retention of information. Research by Sulaiman and Fathoni (2024) also shows that using social media for education can increase students' knowledge and motivation to implement dengue fever prevention behaviors.<sup>15</sup> Another factor supporting the success



of this intervention is that the students are at the vocational upper secondary level and have good cognitive abilities for receiving and understanding scientific information, especially when it is presented in a contextual and interesting way.

Attitude is a person's predisposition to respond consistently, either positively or negatively, to an object.<sup>16</sup> In a health context, a positive attitude toward dengue fever prevention can lead to clean and healthy living behaviors. Therefore, it is important to determine the extent to which educational interventions can change students' attitudes toward dengue fever prevention.<sup>17</sup> Dengue fever prevention efforts require an active role from the community, including adolescents, who have great potential for disseminating information and taking preventive measures.<sup>18</sup>

Despite various dengue fever prevention campaigns and outreach programs, students' awareness of and participation in preventive measures remains low. This indicates that increasing knowledge alone is insufficient without a corresponding change in attitudes that support behaviors that prevent dengue fever.<sup>19</sup>

The results of the study showed a significant improvement in attitudes toward dengue hemorrhagic fever (DHF) prevention among SMK 1 students after receiving an intervention in the form of a social media health promotion campaign. The average attitude score increased from 54.6 in the pretest to 81.3 in the posttest. Statistical tests showed a significant difference in attitudes before and after counseling.

This change in attitude indicates that the health promotion was successful in improving students'

cognitive understanding and influencing their affective aspects regarding dengue fever prevention efforts. Attitude is a person's readiness or willingness to respond positively or negatively to an object, which can develop through learning and experience. In this context, students who initially paid little attention to the importance of eradicating mosquito nests or were unaware of the dangers of dengue fever began to show a willingness to play an active role in maintaining environmental cleanliness and avoiding mosquito bites. According to Lawrence Green's theory in the PRECEDE model, attitude is a predisposing factor that greatly influences the development of health behaviors. Although knowledge is fundamental, a positive attitude is necessary for someone to be willing to adopt healthier behaviors. Therefore, changes in student attitudes after education are an important indicator of dengue fever prevention behavior.<sup>20</sup>

## CONCLUSION AND SUGGESTIONS

Social media can be used as a means of health promotion to improve students' knowledge and attitudes toward preventing dengue fever. Health agencies are encouraged to use social media to promote health and improve students' knowledge, attitudes, and actions regarding dengue fever prevention.

## CONFLICT OF INTEREST

The author declares that there are no conflicts of interest regarding the research and writing of this article.



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