

# The Effect of Video-Based Health Promotion on Clean and Healthy Living Behavior Among Elementary School Students Negeri 050664 Lubuk Dalam, Stabat District, Langkat Regency

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Clean and Healthy Living Behavior (CHLB) among elementary school students needs to be strengthened through health promotion that is appropriate to children's characteristics and the school environment. Video-based media can serve as an educational tool to improve students' understanding and implementation of CHLB. This study aimed to analyze changes in CHLB knowledge and practices following video-based health promotion and to examine the associations of parental support, teacher support, and facilities and infrastructure with students' CHLB knowledge and practices. This quantitative study employed a pre-experimental one-group pretest-posttest design. The study involved 40 students from SD Negeri 050664 Lubuk Dalam, Stabat District, Langkat Regency. Data were collected using questionnaires before and after the intervention and analyzed using descriptive statistics, the Wilcoxon Signed-Rank Test, and bivariate analysis with SPSS at a significance level of 0.05. The results showed an increase in students' knowledge, with the median score rising from 17.50 to 18.00 ( $p = 0.003$ ), and in CHLB practices, with the median score increasing from 12.00 to 14.00 ( $p = 0.001$ ). Parental support was associated with CHLB knowledge ( $p = 0.013$ ) but was not associated with CHLB practices ( $p = 0.270$ ). Teacher support and facilities and infrastructure showed no significant associations with either CHLB knowledge or practices. Video-based health promotion has the potential to improve elementary school students' knowledge and CHLB practices, with sustained reinforcement from families and the school environment.

**Keywords:** clean and healthy living behavior; parental support; teacher support; video-based health promotion; knowledge.

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## 1. Introduction

Clean and Healthy Living Behavior (PHBS) is a key indicator for assessing the success of health promotion in various community settings, including schools. In the context of this study, PHBS indicators focus on several key behaviors relevant to elementary school students, namely handwashing with soap (CTPS), the consumption of healthy and nutritious food and snacks, and regular physical activity. Although these behaviors are relatively simple, they play an important role in disease prevention and in supporting the health of school-aged children. Based on the 2023 Indonesian Health Survey (SKI), the implementation of Clean and Healthy Living Behavior (PHBS) among school-aged children in Indonesia remains suboptimal, particularly regarding proper handwashing, which has reached only 48.2%, and regular physical activity, which stands at 46.1% (Health Development Policy Agency et al., 2023). However, indicators related to the use of sanitary latrines and fruit and vegetable consumption have shown relatively high levels of achievement, reaching 96.35% and 96.39%, respectively (Regulation of the Minister of Health of the Republic of Indonesia Number 44 of 2018, 2018). This situation is concerning because school-aged children remain vulnerable to diseases associated with behavioral and environmental factors, such as diarrhea, acute

respiratory infections (ARI), and helminth infections. The 2018 Basic Health Research (Riskesdas) reported that health problems among school-aged children included diarrhea (12.3%), ARI (4.4%), and malaria (0.4%) (Health Development Policy Agency et al., 2023). These findings highlight the importance of increasing awareness and promoting PHBS from an early age through habits such as handwashing with soap, maintaining environmental cleanliness, engaging in regular physical activity, and consuming safe and nutritious food.

Health problems among school-aged children remain closely associated with personal hygiene, environmental sanitation, and the implementation of Clean and Healthy Living Behavior (PHBS). Poor PHBS practices, such as failing to wash hands before eating and consuming unhygienic snacks, may increase the risk of various health problems, including diarrhea, dengue fever, helminth infections, and foodborne diseases (NA et al., 2022). Therefore, promoting healthy behaviors from an early age is essential for improving children's health and fostering positive and sustainable habits within their daily environments (Rachma et al., 2024). Lubuk Dalam Village, Stabat District, Langkat Regency, has four public elementary schools: SD Negeri 050663, SD Negeri 050664, SD Negeri 050667, and SD Negeri 050668 Lubuk Dalam. This condition highlights the importance of strengthening promotive and preventive efforts through health education in the school environment. Health education should be delivered using engaging media that are appropriate to children's characteristics and learning needs. One such medium is audiovisual video, which can present information through both visual and auditory channels, making health messages easier to understand and more engaging for students (Khavisa et al., 2022; Rahayuni & Rusminingsih, 2021). Therefore, the use of video as a health promotion medium is expected to support improvements in students' knowledge and the implementation of PHBS.

Previous studies have demonstrated the positive effects of health education on students' knowledge of PHBS. Khairunnisa et al. (2023) reported an increase in students' knowledge following PHBS counseling, from 60% to 80%. Similarly, Irma et al. (2021) found that PHBS education improved the knowledge of kindergarten children, with 80.4% of participants achieving a good level of knowledge after the intervention. Furthermore, Aningsih and Wardani (2023) reported that health promotion concerning PHBS and balanced nutrition improved students' knowledge, with an increase of 96% following the intervention. These findings suggest that health education can play an important role in improving children's knowledge of healthy behaviors. However, further research is needed to examine the effectiveness of video-based health promotion in improving both knowledge and PHBS practices among elementary school students, particularly in specific local contexts. Therefore, this study aimed to analyze changes in PHBS knowledge and practices following video-based health promotion and to examine the relationship between parental support, teacher support, school facilities and infrastructure, and students' knowledge and PHBS practices.

## 2. Literature Review

Clean and Healthy Living Behavior (PHBS) is an important component of health promotion, particularly among school-aged children. Schools provide a strategic environment for developing healthy habits because children spend a substantial proportion of their daily lives in educational settings. PHBS among elementary school students includes several essential practices, such as washing hands with soap, consuming healthy and nutritious food, maintaining personal and environmental hygiene, and engaging in regular physical activity. The adoption of these behaviors from an early age is important for reducing the risk of infectious and environmentally related diseases (NA et al., 2022; Rachma et al., 2024).

Health promotion plays a crucial role in improving children's knowledge and encouraging positive health behaviors. Effective health education should be delivered using methods and media that are appropriate to

the characteristics and learning needs of children. Audiovisual media, particularly videos, can provide information through visual and auditory stimulation simultaneously, making health messages easier to understand and more engaging for students (Khavisa et al., 2022; Rahayuni & Rusminingsih, 2021).

Several previous studies have demonstrated the positive effects of health education on students' knowledge of PHBS. Khairunnisa et al. (2023) reported an increase in students' PHBS knowledge from 60% to 80% after receiving health education. Similarly, Irma et al. (2021) found that PHBS education improved the knowledge of kindergarten children, with 80.4% of participants achieving a good level of knowledge following the intervention. Furthermore, Aningsih and Wardani (2023) reported that health promotion related to PHBS and balanced nutrition resulted in improved knowledge among students, with a substantial increase following the educational intervention.

In addition to educational interventions, the implementation of PHBS may be influenced by various supporting factors. The family environment, particularly parental support, can influence children's health knowledge and daily health practices. Likewise, teacher support can contribute to reinforcing health education and encouraging students to adopt healthy behaviors at school. The availability of adequate facilities and infrastructure, such as handwashing facilities, clean water, sanitation, and waste disposal systems, may also support the consistent implementation of PHBS. Therefore, improving children's health behavior requires not only educational interventions but also support from families, schools, and the surrounding environment.

### **Problem Statement**

Despite the increasing implementation of health education programs, the practice of PHBS among school-aged children in Indonesia remains a public health concern. The 2023 Indonesian Health Survey reported that proper handwashing practices and routine physical activity among school-aged children were still relatively low, at 48.2% and 46.1%, respectively (Health Development Policy Agency et al., 2023). These findings indicate that knowledge of healthy behaviors does not always translate into consistent health practices.

Previous studies have primarily focused on the effectiveness of health education or counseling in improving students' knowledge of PHBS (Aningsih & Wardani, 2023; Irma et al., 2021; Khairunnisa et al., 2023). However, fewer studies have specifically examined the effectiveness of video-based health promotion in improving both knowledge and actual PHBS practices among elementary school students. Furthermore, the relationship between environmental and social support factors—including parental support, teacher support, and the availability of facilities and infrastructure—and students' knowledge and PHBS practices requires further investigation. This issue is particularly relevant in Lubuk Dalam Village, Stabat District, Langkat Regency, where elementary school students require engaging and age-appropriate health education to strengthen healthy living behaviors. Video-based health promotion may provide an effective educational approach because it combines visual and auditory information, potentially improving students' attention, comprehension, and retention of health messages. Accordingly, this study aims to examine the effect of video-based health promotion on students' knowledge and PHBS practices and to analyze the relationships between parental support, teacher support, facilities and infrastructure, and Clean and Healthy Living Behavior among students of SD Negeri 050664 Lubuk Dalam, Stabat District, Langkat Regency.

### **3. Method**

This study employed a quantitative approach using a pre-experimental one-group pretest-posttest design to assess changes in students' knowledge and Clean and Healthy Living Behavior (PHBS) practices before and after receiving video-based health promotion. The study was conducted at SD Negeri 050664

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Lubuk Dalam, Stabat District, Langkat Regency, Indonesia, from September 2025 to July 2026. The study population consisted of all fifth-grade students of SD Negeri 050664 Lubuk Dalam who met the predetermined research criteria. A total of 40 students were included as research respondents based on the established inclusion criteria and their willingness to participate in the study. The intervention consisted of health promotion using video-based educational media focusing on Clean and Healthy Living Behavior (PHBS). The educational content included proper handwashing with soap, the consumption of healthy and nutritious food and snacks, personal and environmental hygiene, and the importance of regular physical activity. The video-based health promotion was delivered as an audiovisual educational intervention designed to provide health information in an engaging and age-appropriate format. The use of video was intended to facilitate students' understanding and retention of key PHBS messages and encourage the adoption of healthy practices.

Data were collected using a structured questionnaire designed to assess students' PHBS knowledge, PHBS practices, parental support, teacher support, and the availability of facilities and infrastructure. The research instrument underwent validity and reliability testing according to the established study procedures, and the results indicated that the instrument was suitable for data collection. Data collection was conducted at two time points. The pretest was administered before the video-based health promotion intervention to measure baseline knowledge and PHBS practices. Following the intervention, the posttest was administered using the same questionnaire to assess changes in students' knowledge and PHBS practices. The primary outcomes of this study were students' knowledge of PHBS and PHBS practices. The main intervention variable was video-based health promotion, while parental support, teacher support, and the availability of facilities and infrastructure were examined as factors associated with students' PHBS knowledge and practices.

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were used to summarize respondents' characteristics and study variables. Changes in PHBS knowledge and practice scores before and after the intervention were analyzed using the Wilcoxon Signed-Rank Test for paired measurements. Bivariate analysis was conducted to examine the associations between parental support, teacher support, facilities and infrastructure, and students' PHBS knowledge and practices. The Fisher's Exact Test was used when the expected frequency in one or more cells was less than five. Statistical significance was determined at a  $p$ -value  $< 0.05$ . Participation in the study was voluntary. Students and relevant school authorities were informed about the purpose and procedures of the study. Participant confidentiality and anonymity were maintained throughout the data collection, analysis, and reporting processes.

## 4. Results and Discussion

### Respondent Characteristics

The study involved 40 fifth-grade students at Lubuk Dalam Public Elementary School 050664. Respondents were aged 10 to 12, with an average age of 10.78.

**Table1.** Respondent Characteristics

| Respondent Characteristics | f  | %    |
|----------------------------|----|------|
| Age                        |    |      |
| 10 years                   | 14 | 35.0 |
| 11 years old               | 21 | 52.5 |
| 12 years old               | 5  | 12.5 |
| Gender                     |    |      |

| Respondent Characteristics | f  | %    |
|----------------------------|----|------|
| Man                        | 16 | 40.0 |
| Woman                      | 24 | 60.0 |
| Parental Support           |    |      |
| Less Supportive            | 11 | 27.5 |
| Support                    | 29 | 72.5 |
| Teacher Support            |    |      |
| Less Supportive            | 5  | 12.5 |
| Support                    | 35 | 87.5 |
| Infrastructure             |    |      |
| Insufficient               | 7  | 17.5 |
| Adequate                   | 33 | 82.5 |

The largest age group was 11 years old, namely 21 (52.5%). Based on gender, 21 (60%) were female and 16 (40%) were male. The characteristics of supporting factors showed that the majority of respondents received supportive parental support, namely 29 people (72.5%). Teacher support was also dominated by the supportive category, namely 35 people (87.5%). In terms of facilities and infrastructure, 33 respondents (82.5%) were in the adequate facilities and infrastructure category.

#### Condition of PHBS Knowledge and Action before Intervention

Before health promotion using video media, the level of knowledge and PHBS practices of respondents were divided into good and less good categories.

**Table2.** Distribution of Respondents' Knowledge Pretest

| Knowledge Pretest | f  | %     |
|-------------------|----|-------|
| Not good          | 20 | 50    |
| Good              | 20 | 50    |
| Total             | 40 | 100.0 |

As many as 20 students or 50% have good knowledge, while 20 students or 50% have poor knowledge.

**Table3.** Distribution of Respondents' Action Pretest

| Action Pretest | f  | %     |
|----------------|----|-------|
| Not good       | 26 | 65    |
| Good           | 14 | 35    |
| Total          | 40 | 100.0 |

The PHBS behaviors demonstrated clearer problems. Before the intervention, 26 students, or 65%, were in the poor behavior category, and only 14 students, or 35%, were in the good behavior category.

#### Changes in knowledge after health promotion using video

**Table 4.** Post-test Distribution of Respondents' Knowledge

| Knowledge Post-Test | f  | %     |
|---------------------|----|-------|
| Not good            | 10 | 25    |
| Good                | 30 | 75    |
| Total               | 40 | 100.0 |

After the intervention, the number of students with good knowledge increased from 20, or 50%, to 30, or 75%. Conversely, the number of students with poor knowledge decreased from 20, or 50%, to 10, or 25%.

**Table 5.** The Influence of Pre-test and Post-test on Respondents' Knowledge

| Variables          | N  | Before (Median) | After (Median) | (Min-Max) | P-Value |
|--------------------|----|-----------------|----------------|-----------|---------|
| Pretest – Posttest | 40 | 17.50           | 18.00          | 13-20     | 0.003   |

### Wilcoxon Signed Ranks Test

These changes were also evident in the scores. The median knowledge score increased from 17.50 in the pretest to 18.00 in the posttest. The Wilcoxon Signed Rank test yielded  $p = 0.003$ . Since  $p < 0.05$ , there was a significant difference between knowledge before and after the intervention.

### Changes in behavior after health promotion using video

**Table 6.** Post-test distribution of Respondents' actions

| Post-Test Action | f  | %     |
|------------------|----|-------|
| Not good         | 15 | 37.5  |
| Good             | 25 | 62.5  |
| Total            | 40 | 100.0 |

Changes in behavior showed a clearer pattern. Before the intervention, only 14 students, or 35%, had good PHBS behaviors. After the intervention, that number increased to 25 students, or 62.5%. Meanwhile, students with poor behaviors decreased from 26 students, or 65%, to 15 students, or 37.5%.

**Table 7.** Effect of Pre-test and Post-test Respondent Actions

| Variables          | N  | Before (Median) | After (Median) | (Min-Max) | P-Value |
|--------------------|----|-----------------|----------------|-----------|---------|
| Pretest – Posttest | 40 | 12.00           | 14.00          | 8-15      | 0.001   |

### Wilcoxon Signed Ranks Test

The median action score increased from 12.00 to 14.00. The Wilcoxon Signed Rank test yielded  $p = 0.001$ , indicating a significant difference between pre- and post-intervention actions. The Z-score reported in the discussion is -3.338.

### Association of Parental Support, Teacher Support, and Facilities and Infrastructure with PHBS Knowledge and Practices

**Table 8.** The Relationship Between Parental Support and PHBS Actions

| Parental Support | Action Less Good n (%) | Good n (%) | P-value* |
|------------------|------------------------|------------|----------|
| Less Supportive  | 9 (81.8%)              | 2 (18.2%)  | 0.270    |
| Support          | 11 (58.6%)             | 12 (41.4%) |          |

Fisher's Exact Test analysis showed  $p = 0.270$ . In the group receiving less parental support, 9 out of 11 students, or 81.8%, had poor behavior, and 2 students, or 18.2%, had good behavior. In the group receiving parental support, 17 out of 29 students, or 58.6%, had poor behavior, and 12 students, or 41.4%, had good behavior.

**Table 9.** The Relationship Between Teacher Support and PHBS Actions

| Teacher Support | Action Less Good n (%) | Good n (%) | P-value* |
|-----------------|------------------------|------------|----------|
| Less Supportive | 5 (100%)               | 0 (0 %)    | 0.143    |
| Support         | Action                 | 14 (40%)   |          |

In the group with less teacher support, all 5 respondents, or 100%, had poor PHBS practices. In the group with teacher support, 21 of 35 respondents, or 60%, had poor practices and 14 respondents, or 40%, had good practices. Fisher's exact test yielded  $p = 0.143$ .

**Table10.** The Relationship between Facilities and Infrastructure and Respondents' PHBS Actions

| Infrastructure | Action          | Good n (%) | P-value* |
|----------------|-----------------|------------|----------|
|                | Less Good n (%) |            |          |
| Insufficient   | 7 (100%)        | 0 (0 %)    |          |
| Adequate       | 19 (57.6%)      | 14 (42.4%) | 0.075    |

In the group with inadequate facilities and infrastructure, all 7 respondents, or 100%, had poor PHBS practices. In the group with adequate facilities and infrastructure, 19 respondents, or 57.6%, had poor practices and 14 respondents, or 42.4%, had good practices. Fisher's Exact test yielded  $p = 0.075$ . Since  $p > 0.05$ , the study did not find a significant relationship between facilities and infrastructure and PHBS practices.

**Table 11.** The relationship between parental support and PHBS knowledge

| Parental Support | Knowledge Less Good n (%) | Good n (%) | P-value* |
|------------------|---------------------------|------------|----------|
| Less Supportive  | 9 (81.8%)                 | 2 (18.2%)  |          |
| Support          | 11 (37.9%)                | 18 (62.1%) | 0.013    |

Parental support showed different results in terms of its relationship to action. In the group with less parental support, only 2 of 11 students, or 18.2%, had good knowledge, while 9 students, or 81.8%, had poor knowledge. In the group receiving parental support, 18 of 29 students, or 62.1%, had good knowledge, and 11 students, or 37.9%, had poor knowledge. The chi-square test yielded  $p = 0.013$ .

**Table 12.** The relationship between teacher support and PHBS knowledge

| Teacher Support | Knowledge Less Good n (%) | Good n (%) | P-value* |
|-----------------|---------------------------|------------|----------|
| Less Supportive | 4 (80%)                   | 1 (20%)    |          |
| Support         | (14.3%)                   | 19 (54.3%) | 0.342    |

In the group with less teacher support, 1 out of 5 students (20%) had good knowledge, while 4 students (80%) had poor knowledge. In the group with teacher support, 19 out of 35 students (54.3%) had good knowledge and 16 students (14.3%) had poor knowledge. Fisher's exact test yielded  $p = 0.342$ . With  $p > 0.05$ , the study found no significant relationship between teacher support and PHBS knowledge. In the group with inadequate facilities and infrastructure, 6 respondents, or 85.7%, had good knowledge, and 1 respondent, or 14.3%, had poor knowledge. In the group with adequate facilities and infrastructure, 19 respondents, or 57.6%, had good knowledge, and 14 respondents, or 42.4%, had poor knowledge. Fisher's exact test yielded  $p = 0.091$ . Thus, there is no significant relationship between facilities and infrastructure and PHBS knowledge.

### Discussion *The influence of health promotion using videos on PHBS knowledge*

A study of 40 students at SD Negeri 050664 Lubuk Dalam showed that health promotion using video media was associated with increased knowledge and PHBS practices. Before the intervention, the proportion of respondents with good and poor knowledge was equal, 20 students or 50% each. After the intervention, respondents with good knowledge increased to 30 students or 75%. In PHBS practices, respondents with good practices increased from 14 students or 35% to 25 students or 62.5%. The Wilcoxon Signed-Rank Test analysis showed that the median knowledge score increased from 17.50 to 18.00 with  $p = 0.003$ . These results indicate a significant difference in knowledge between before and after health promotion using video media. These findings strengthen the evidence that audiovisual media can be an effective medium in health education. Video allows for the simultaneous delivery of information through visual and audio elements, allowing students to receive information while simultaneously seeing examples of behaviors. Morgado et al.'s (2024) meta-analysis of 40 studies showed that video-based approaches

have an impact on various health education outcomes, including knowledge, skills, and attitudes. These effects vary by field and outcome, but generally support the use of video as a learning approach in health education.(Morgado et al., 2024).The findings of this study are also in line with(Xiao et al., 2024), which, through a systematic review and meta-analysis, found that video-based health promotion is an alternative or complement to conventional health promotion methods. The authors emphasized that video effectiveness is influenced by message characteristics, duration, information credibility, audience characteristics, and the theoretical basis used in message development. The results of this study also strengthen research related to PHBS Education in school-age children.(Sasmitha et al., 2020)A systematic review showed that health education is one strategy that can improve PHBS knowledge in school-age children. Recent research in Indonesia also shows that PHBS education can improve school children's knowledge and behavior, although the media, materials, and intervention designs differ.(Puspita & Aziz, 2025).

More substantive changes were seen in PHBS practices. Before the intervention, only 14 respondents (35%) had PHBS practices in the good category, while 26 respondents (65%) were in the poor category. After the intervention, the number of respondents with good practices increased to 25 people (62.5%), while those with poor practices decreased to 15 people (37.5%). The median practice score also increased from 12.00 to 14.00. The Wilcoxon Signed-Rank Test yielded  $p = 0.001$ , indicating a significant difference between practices before and after the intervention. The 27.5 percentage point increase in action is significant because the ultimate goal of health promotion is not simply to increase understanding but to encourage the adoption of healthy behaviors. These results indicate that post-intervention changes occurred at two levels: the cognitive level through knowledge and the behavioral level through PHBS actions. These findings are consistent with research on video-based health promotion.(Xiao et al., 2024)shows that videos can have an impact on various health outcomes, including behavior and behavioral intentions, although their effectiveness is influenced by intervention and population characteristics.(Morgado et al., 2024)also found that video had an effect on the development of skills and attitudes, suggesting that audiovisual media can be used to support change beyond simply increasing knowledge. Recent research on video education for school children in Indonesia also supports this pattern.(Fathariq et al., 2025)Through a systematic review of video-based education for dengue fever prevention in school children, it was shown that the video approach has the potential to increase knowledge and behavioral aspects of prevention. The study found interesting results regarding parental support. Parental support was significantly associated with PHBS knowledge ( $p = 0.013$ ). A total of 62.1% of students who received parental support had good knowledge, while in the group receiving less support, only 18.2% had good knowledge. These findings suggest that families can be a source of information and reinforcement for healthy behaviors. Parents can help children understand PHBS through communication, modeling, reminders, and fostering habits at home. Because children spend most of their time in the family environment, health experiences at home can reinforce information received at school. However, parental support did not show a significant relationship with PHBS practices, with  $p = 0.270$ . This discrepancy between knowledge and practice can be explained by the habit formation process. Parental support may be more easily enhanced by understanding because information can be conveyed directly. Conversely, changes in practice require repetition and consistency. Student-reported support also does not necessarily reflect the intensity of support they actually receive on a daily basis. The majority of respondents received teacher support in the supportive category, namely 35 students (87.5%), while only five students (12.5%) were in the less supportive category. Teacher support did not show a significant relationship with knowledge or PHBS practices. The test results showed  $p = 0.342$  for knowledge and  $p = 0.143$  for practices. This condition cannot be interpreted as evidence that teachers have no role in PHBS. Instead, the highly unequal distribution of teacher support makes variation between groups small. Research on Health-

Promoting Schools shows that the role of schools in health promotion is multidimensional. Teachers are one component, but student behavior changes are also influenced by school policies, the physical environment, family involvement, and social support.(Shaopu & Gang, 2023).

Most respondents were in adequate facilities and infrastructure conditions, namely 33 students (82.5%), while seven students (17.5%) were in the inadequate category. The analysis showed that facilities and infrastructure were not significantly related to PHBS actions, with  $p = 0.075$ , or to PHBS knowledge, with  $p = 0.091$ . School-based research also shows that interventions that combine education with environmental changes can produce more consistent results than interventions that only provide information.(Dabravolskaj et al., 2020).

## 5. Conclusion

This study demonstrated that video-based health promotion was associated with significant improvements in PHBS knowledge and practices among students of SD Negeri 050664 Lubuk Dalam. The median knowledge score increased from 17.50 before the intervention to 18.00 after the intervention ( $p = 0.003$ ), while the median PHBS practice score increased from 12.00 to 14.00 ( $p = 0.001$ ). Parental support was significantly associated with PHBS knowledge ( $p = 0.013$ ), but it was not significantly associated with PHBS practices ( $p = 0.270$ ). Teacher support and the availability of facilities and infrastructure were not significantly associated with either PHBS knowledge or practices. These findings suggest that video-based health promotion has the potential to serve as an effective educational medium for improving PHBS knowledge and practices among elementary school students. However, the findings should be interpreted with caution because the study involved only 40 students from a single school and employed a pre-experimental design without a control group, which limits the generalizability of the results. Schools are encouraged to incorporate video-based education into PHBS promotion programs and combine it with regular health-related activities, behavioral reinforcement, and the development of healthy habits within the school environment. Strengthening parental involvement is also important to reinforce health messages and encourage the consistent practice of PHBS at home. Future studies should employ controlled or experimental designs with larger and more diverse samples involving multiple schools. Longer follow-up periods are also recommended to assess the sustainability of behavioral changes. In addition, future research may include variables such as attitudes, self-efficacy, behavioral intentions, and environmental factors to provide a more comprehensive understanding of the mechanisms underlying changes in PHBS knowledge and practices.

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