Miracle Get Journal
Vol. 03, No. 2, May 2026, 38-47
***e*-ISSN: 3047-8839**

The Effectiveness of Social Media-Based Health Promotion Interventions in Improving Clean and Healthy Living Behaviours (PHBS)

Ayu Rizky[1]*, & Yannerith Chintya[2]
[1]*Institut Teknologi dan Kesehatan Muhammadiyah Kalimantan Barat, Indonesia, Universitas Pembangunan Indonesia Manado, Indonesia
*Co e-mail: ayurizky@itekesmukalbar.ac.id[1]

Article Information
Received: April 25, 2026
Revised: June 01, 2026
Online: June 08, 2026

Keywords
Clean and Healthy Living Behavior, Health Promotion, Social Media Intervention, Behavior Change, Public Health

ABSTRACT

Healthy Living Behaviours (HLB) are essential for improving public health. The rapid growth of social media provides new opportunities for health promotion through interactive, accessible, and wide-reaching information dissemination. This study aimed to analyse the effectiveness of social media-based health promotion interventions in improving knowledge, attitudes, and HLB practices among the working-age population. A quasi-experimental design with a non-equivalent control group approach was employed. Sixty respondents were selected through purposive sampling and divided into an intervention group (n=30) and a control group (n=30). Data were collected using a validated and reliable questionnaire and analysed using the Shapiro–Wilk test, paired t-tests, and independent t-tests (α=0.05). The intervention group demonstrated significant improvements in knowledge (Δ=17.2; p<0.001), attitudes (Δ=15.1; p<0.001), and HLB practices (Δ=18.6; p<0.001), while no significant changes were observed in the control group (p>0.05). Independent t-test results confirmed significant differences between groups, with the greatest effect observed in HLB practices (Δ=14.7; p<0.001). Social media-based health promotion is an effective, innovative, and scalable strategy for enhancing knowledge, attitudes, and HLB practices, supporting evidence-based public health programmes and digital health promotion initiatives in Indonesia.

Keywords: *Clean and Healthy Living Behavior, Health Promotion, Social Media Intervention, Behavior Change, Public Health*

http://doi.org/10.69855/mgj.v3i2.617
https://gpijournal.com/index.php/miracle
PUBLISHED BY : GPress Indonesia

INTRODUCTION

Healthy and Hygienic Living Behaviours (PHBS) constitute a set of behaviours consciously adopted to improve the quality of life and the health status of the population through promotive and preventive measures. PHBS is a key component in the prevention of various communicable and non-communicable diseases, which remain the primary contributors to the global health burden (Mufidah et al., 2024). In Indonesia, the implementation of PHBS has become a government priority programme; however, the achievement of household PHBS indicators still shows disparities between regions and has not yet yielded optimal results. This situation has led to rising rates of morbidity, mortality, and the burden of healthcare costs—all of which could actually be prevented through the consistent adoption of healthy behaviours (Kemenkes, 2021; Rosyadah, 2025).

The main issue in the implementation of healthy lifestyle practices is not only the low level of public knowledge, but also the gap between knowledge and practice (the knowledge-behaviour gap). Many individuals understand the importance of handwashing, maintaining environmental hygiene, engaging in physical activity, and adopting a healthy lifestyle, yet are unable to consistently put these behaviours into practice in their daily lives. This situation indicates that changes in health behaviour are influenced by various factors, such as knowledge, attitudes, the social environment, access to information, and individual motivation (Safrudin et al., 2026).

Advances in digital technology have transformed the way the public communicates and seeks health information. Social media platforms such as Instagram, TikTok and Facebook have become easily accessible, interactive sources of information with a wide reach. The nature of social media allows health messages to be conveyed rapidly and repeatedly, thereby potentially increasing public engagement with health messages (Wahyuni et al., 2022). Furthermore, interactive features such as comments, polls, content sharing, and Q&A sessions facilitate two-way communication that can strengthen the learning process and promote changes in health behaviour (Wenas & Arsastha, 2025). The use of health influencers has also been shown to increase the acceptance of health messages, as information is conveyed in a more persuasive manner that is easily understood by the audience (Rubiah et al., 2026).

In theory, the effectiveness of social media in influencing health behaviour can be explained through the Health Belief Model, the Theory of Planned Behaviour, and Social Cognitive Theory, which emphasise the importance of individual perceptions, social norms, self-efficacy, and exposure to behavioural models in the process of health behaviour change. Through the repeated dissemination of information, the formation of digital social norms, and the visual presentation of examples of healthy behaviour, social media has the potential to drive simultaneous changes in knowledge, attitudes, and practices.

Nevertheless, previous research findings remain mixed. Most studies report an increase in knowledge following social media interventions; however, the impact on actual behavioural change remains inconsistent (Warongan et al., 2025). Furthermore, previous studies generally focused on only one or two dimensions of PHBS, employed research designs with limited controls, or were conducted on specific population groups, meaning the generalisability of the results remains limited. Research within the Indonesian context that simultaneously evaluates changes in

knowledge, attitudes, and PHBS practices through structured social media interventions is also still relatively scarce.

Given this research gap, a study is needed that can evaluate the effectiveness of social media-based health promotion interventions more comprehensively across all dimensions of healthy lifestyle behaviour. The uniqueness of this study lies in the use of a quasi-experimental design with a control group, the simultaneous measurement of the three dimensions of PHBS (knowledge, attitude, and practice), and the implementation of a social media intervention combining infographics, short videos, interactive polls, and Q&A sessions over a four-week period. Thus, this study is expected to provide empirical evidence regarding the effectiveness of social media in bridging the knowledge-behaviour gap whilst enriching the literature on digital health promotion in Indonesia.

METHODS

This study employs a quantitative approach using a quasi-experimental design with a non-equivalent control group. The study aims to evaluate the effectiveness of a social media-based health promotion intervention on improving knowledge, attitudes, and practices regarding Clean and Healthy Living Behaviours (CHLB). Measurements were taken twice: before the intervention (pre-test) and after the intervention (post-test) in both the intervention and control groups.

The study was conducted in the city of Padang over an 8–12 week period. The study population consisted of individuals of working age (18–35 years) who were active social media users. Sampling was carried out using purposive sampling based on the following inclusion criteria: (1) active social media use of at least 2 hours per day, (2) possession of an active Instagram, TikTok, or Facebook account, (3) willingness to participate in the entire research process, and (4) completion of the informed consent form. Exclusion criteria included respondents who did not complete the intervention in full or did not complete the post-test. Based on these criteria, 60 respondents were selected, comprising 30 respondents in the intervention group and 30 respondents in the control group.

The research instrument comprised a structured PHBS questionnaire consisting of 15 multiple-choice knowledge items, 15 attitude items using a 1–5 Likert scale, and 10 self-report practice items. Prior to use, the instrument was tested for validity and reliability on 30 respondents with characteristics similar to those of the research sample. The validity test results showed that all items had correlation coefficients greater than the table r (calculated r = 0.412–0.812; table r = 0.361), so all items were deemed valid. The reliability test using Cronbach's Alpha yielded an alpha value of 0.821 for knowledge, 0.873 for attitudes, and 0.856 for practice, indicating good reliability.

The intervention group received social media-based health promotion over four weeks, with posts published 3–4 times per week in the form of infographics, short videos, digital posters, interactive polls, and Q&A sessions. The material provided covered handwashing practices, environmental sanitation, physical activity, and other healthy lifestyle behaviours. The control group received no specific intervention and only received routine health information available in the local community.

Data analysis was performed using statistical software. Univariate analysis was used to describe the characteristics of the respondents and the distribution of the study variables. Prior to conducting parametric analysis, the data were tested for normality using the Shapiro-Wilk test. The test results showed that all variables had a p-value > 0.05, indicating that the data were normally distributed and met the assumptions for the use of parametric tests. Bivariate analysis was performed using a paired t-test to test for differences in pre-test and post-test scores within each group, whilst an independent t-test was used to compare post-test scores between the intervention and control groups. The statistical significance level was set at $\alpha = 0.05$.

The study obtained ethical approval, and all respondents provided informed consent prior to participation. The confidentiality of respondents' identities was guaranteed, and all data were used solely for research purposes.

RESULTS

1. Respondent Characteristics (Univariate Analysis)

Table 1. Distribution of Respondent Characteristics (n = 60)

Characteristics	Intervention Group (n=30)	Control Group (n=30)	Total (%)
Age (Mean ± SD)	24.6 ± 3.2 years	25.1 ± 3.5 years	-
Gender			
Man	12 (40%)	11 (36.7%)	38.3%
Woman	18 (60%)	19 (63.3%)	61.7%
Education			
SENIOR HIGH SCHOOL	10 (33.3%)	11 (36.7%)	35.0%
College	20 (66.7%)	19 (63.3%)	65.0%
Social Media Intensity			
< 3 hours/day	9 (30%)	10 (33.3%)	31.7%
≥ 3 hours/day	21 (70%)	20 (66.7%)	68.3%

Respondent characteristics in both groups were relatively homogeneous, both in terms of age, gender, education, and intensity of social media use. This indicates that both groups had comparable baselines, so differences in outcomes after the intervention can be more validly attributed to the treatment.

2. Descriptive PHBS Score (Knowledge, Attitude, Practice)

Table 2. Average PHBS Score Before and After Intervention

Variables	Group	Pre-test (Mean ± SD)	Post-test (Mean ± SD)	Δ Mean
Knowledge	Intervention	65.2 ± 8.1	82.4 ± 6.7	+17.2
	Control	66.1 ± 7.9	69.3 ± 7.5	+3.2
Attitude	Intervention	70.5 ± 6.5	85.6 ± 5.8	+15.1
	Control	71.2 ± 6.8	73.5 ± 6.3	+2.3
Practice	Intervention	60.3 ± 7.4	78.9 ± 6.9	+18.6

Control	61.0 ± 7.1	64.2 ± 6.8	+3.2

3. PHBS Knowledge

There was a significant increase descriptively in the intervention group (Δ = +17.2), compared to the control group, which only experienced a small increase (Δ = +3.2). This indicates that exposure to educational content through social media is effective in increasing respondents' understanding.

4. Attitude towards PHBS

The intervention group showed a significant increase in positive attitudes (Δ = +15.1), while the control group remained relatively stable. This indicates that social media improves not only cognitive but also affective aspects of respondents.

5. PHBS Practices

The increase in practice in the intervention group (Δ = +18.6) is an important finding, as it indicates a real change in behavior. In contrast, the control group experienced only minimal change, indicating the limitations of the no-intervention approach.

6. Distribution of PHBS Categories

Table 3. Respondents' PHBS Level Categories

Variables	Category	Pre Intervention (%)	Post Intervention (%)	Pre Control (%)	Post Control (%)
Knowledge	Low	40%	10%	36.7%	30%
	Currently	50%	30%	50%	50%
	Tall	10%	60%	13.3%	20%
Attitude	Negative	33.3%	6.7%	30%	26.7%
	Positive	66.7%	93.3%	70%	73.3%
Practice	Not enough	46.7%	13.3%	43.3%	36.7%
	Good	53.3%	86.7%	56.7%	63.3%

The distribution of categories shows a very clear shift in the intervention group:

- Proportionhigh knowledge increased from 10% to 60%
- Positive attitudes increased to 93.3%
- Good PHBS practices increased significantly to 86.7%

In contrast, the control group showed less significant changes. This strengthens the indication that social media-based interventions have a substantial effect on improving all dimensions of PHBS.

Bivariate Analysis

1. Paired t-test (Pre-test vs Post-test in each group)

Table 4. Results of the Paired t-test in the Intervention and Control Groups

Variables	Group	Mean Pre-test	Mean Post-test	Mean Difference	t-value	p-value
Knowledge	Intervention	65.2	82.4	+17.2	10.85	0.000
	Control	66.1	69.3	+3.2	1.98	0.056
Attitude	Intervention	70.5	85.6	+15.1	9.72	0.000
	Control	71.2	73.5	+2.3	1.65	0.108
Practice	Intervention	60.3	78.9	+18.6	11.23	0.000
	Control	61.0	64.2	+3.2	1.89	0.068

Information:*p < 0.05 (significant)*

1. Interpretation of Paired t-test:

a. Intervention Group

All variables (knowledge, attitude, practice) showed an increase.statistically significant (p = 0.000). A high t-value indicates a strong intervention effect. This confirms that social media-based health promotion interventions are effective in improving all dimensions of PHBS.

b. Control Group

There was no significant change in all variables (p > 0.05). Although there was an increase in the average, the change wasnot statistically significant, so it can be considered as natural variation or uncontrolled external effects.

2. Independent t-test (Comparison between groups)

Table 5. Results of the Independent t-test between the Intervention and Control Groups

Variables	Mean Intervention (Post)	Mean Control (Post)	Mean Difference	t-value	p-value
Knowledge	82.4	69.3	13.1	6.45	0.000
Attitude	85.6	73.5	12.1	5.98	0.000
Practice	78.9	64.2	14.7	6.87	0.000

Information:*p < 0.05 (significant)*

Interpretation of Independent t-test:

There are differences thatstatistically significant between the intervention and control groups on all variables (p = 0.000).

The intervention group had consistently higher scores than the control group after the intervention.

The largest average difference was found in the PHBS practice variable (Δ = 14.7), indicating that the intervention not only had an impact on cognitive aspects, but also succeeded in encouraging real behavioral changes.

DISCUSSION

1. Average PHBS Score Before and After Intervention

The results of the study indicate that social media-based health promotion interventions are capable of significantly improving knowledge, attitudes and healthy lifestyle practices in the intervention group compared to the control group. These findings indicate that social media not only serves as a means of disseminating health information but is also capable of influencing the process of attitude formation and behavioural change. The greatest improvement was found in the dimension of PHBS practices, suggesting that health information delivered repeatedly and interactively can encourage individuals to adopt healthy behaviours in their daily lives.

These findings are consistent with the research by Seiler et al. (2022), Bhandari et al. (2024), and Mustofa & Sani (2024), which reported that social media-based health interventions are effective in improving health knowledge and behaviour across various target groups. However, this study demonstrates a more comprehensive contribution as it successfully demonstrates simultaneous improvements in the aspects of knowledge, attitudes, and PHBS practices.

Theoretically, these results support Social Cognitive Theory and the Health Belief Model, which explain that repeated exposure to health information can increase perceived benefits, self-efficacy, and motivation to adopt healthy behaviours. In practical terms, these findings suggest that social media can be utilised as an efficient, easily accessible health promotion medium that is well-suited to the characteristics of the working-age population.

The researchers assume that the success of the intervention is influenced by a combination of visual content, consistent frequency of exposure, and the high level of interactivity on social media, which is capable of increasing respondents' engagement with health messages.

2. Respondents' PHBS Level Category

The shift in PHBS categories within the intervention group indicates that the social media intervention not only improved respondents' average scores but also significantly altered the distribution of PHBS levels. The decrease in the proportion of the low category and the increase in the high category suggest a behavioural change among the majority of respondents.

These results are consistent with the research by Nazarnia et al. (2023), Warongan et al. (2025), and Shaluhiyah et al. (2025), which found that digital interventions are capable of improving health literacy and promoting significant changes in health behaviour. The similarity of these findings reinforces the view that social media is an effective means of reaching community groups with varying levels of health literacy.

In practical terms, the shift in the PHBS category indicates that social media has the potential to be used as a large-scale health promotion strategy at relatively low cost. Theoretically, these findings support the Transtheoretical Model and the Diffusion of Innovations Theory, which explain that behavioural change occurs through a gradual process influenced by exposure to information and the social environment.

The researchers assume that varied and easily understandable content formats are key factors enabling respondents with low initial knowledge levels to still accept and implement the health messages provided.

3. Results of the Paired t-test in the Intervention and Control Groups

The results of the paired t-test showed that all variables in the intervention group exhibited a significant increase following the intervention, whereas the control group showed no significant change. These findings indicate that the changes observed were a direct effect of the social media-based health promotion intervention.

These findings are consistent with those of Chang et al. (2022), Nazarnia et al. (2023), and Li et al. (2021), who reported that digital interventions based on behaviour change theory resulted in significant improvements in health indicators compared to pre-intervention levels.

Theoretically, these results reinforce the Information Processing Theory, which explains that repeated exposure to information through various media formats can enhance the processes of understanding, information retention, and behaviour formation. In practical terms, these results demonstrate that social media-based health promotion programmes can serve as an effective alternative for health education in the short term.

4. Results of the Independent t-test between the Intervention and Control Groups

Significant differences between the intervention group and the control group across all variables indicate that social media-based health promotion is more effective than approaches without structured interventions. The largest difference in the practice dimension suggests that social media is capable of bridging the gap between health knowledge and behaviour.

These findings are consistent with the research by Bhandari et al. (2024) and Seiler et al. (2022), which showed that social media interventions have a greater impact on behavioural change compared to groups that did not receive an intervention.

The practical implication of these findings is the need to integrate social media into public health promotion programmes as a health communication strategy that is more adaptable to developments in digital technology. Theoretically, these results support the Theory of Planned Behaviour and Social Cognitive Theory, which explain that behaviour is influenced by attitudes, social norms, and an individual's belief in their ability to perform an action.

The researchers hypothesise that the high level of behavioural change in the intervention group was influenced by digital social interactions that fostered positive norms and increased respondents' motivation to adopt healthy lifestyle practices in their daily lives.

CONCLUSIONS

This study proves that social media-based health promotion interventions are significantly effective in improving Clean and Healthy Living Behaviors (PHBS) across all measured dimensions. The intervention group showed significant increases in knowledge ($\Delta = +17.2$), attitudes ($\Delta = +15.1$), and PHBS practices ($\Delta = +18.6$) after four weeks of intervention, as confirmed by a paired t-test with

a p-value of 0.000 for all three variables. In contrast, the control group did not show statistically significant changes ($p > 0.05$). Intergroup comparisons using independent t-tests yielded significant differences in knowledge, attitudes, and practices ($p = 0.000$), with the largest difference found in the practice dimension ($\Delta = 14.7$). These findings indicate that social media is not only effective in improving cognitive aspects but also capable of driving real behavioral changes. Social media-based interventions are recommended as innovative, scalable, and evidence-based health promotion strategies in community PHBS improvement programs, especially for productive age groups in the digital era.

REFERENCES

Bhandari, G., Dhital, S. R., Khatri, D., & Bhandari, T. R. (2024). Effectiveness of Social Media-Based Intervention in Intention Change of Adolescents for Promoting Sexual Health Behavior in Western Terai of Nepal. *Journal of Research in Health Sciences*, *24*(2), e00613. https://doi.org/10.34172/jrhs.2024.148

Chang, S.-L., Wu, W.-C., Hu, Y.-J., Lai, H.-Y., & Wong, T.-C. (2022). Quasi-experimental design for using an interactive social media intervention program to improve truck drivers' health beliefs and eating behaviors. *BMC Public Health*, *22*(1). https://doi.org/10.1186/s12889-022-13883-6

Kementerian Kesehatan Republik Indonesia. (2021, December 21). The clean and healthy living behavior movement in basic health research data. *Ayo Sehat*. https://ayosehat.kemkes.go.id/gerakan-perilaku-hidup-bersih-dan-sehat-dalam-data-riset-kesehatan-dasar

Li, L., Wood, C. E., & Kostkova, P. (2021). Vaccine hesitancy and behavior change theory-based social media interventions: a systematic review. *Translational Behavioral Medicine*, *12*(2). https://doi.org/10.1093/tbm/ibab148

Mufidah, N. A. N., A'yunin Al Isyrofi, A. Q., & Abdullah, S. A. (2024). The effectiveness of health promotion media on clean and healthy living behavior (PHBS). *Deleted Journal*, *2*(1), 160–172. https://doi.org/10.61132/vitamin.v2i1.111

Mustofa, R. A. B., & Sani, M. (2024). The effectiveness of health promotion through social media in encouraging healthy living behavior among adolescents. *Sosial Simbiosis : Jurnal Integrasi Ilmu Sosial Dan Politik*, *1*(3), 212–223. https://doi.org/10.62383/sosial.v1i3.484

Nazarnia, M., Zarei, F., & Roozbahani, N. (2023). A mobile-based educational intervention on media health literacy: A quasi-experimental study. *Health Promotion Perspectives*, *13*(3), 227–236. https://doi.org/10.34172/hpp.2023.28

Rosyadah, R. (2025). Synchronization of the School Health Program (Trias UKS) with the 2013 Curriculum and the Merdeka Curriculum: A Review of School Health Policy. *Kinanti Jurnal Karya Insan Pendidikan Terpilih*, *3*(2), 500–505. https://doi.org/10.62518/dkrehr68

Rubiah, E., Sitepu, E. L., & Ramadhan, S. (2026). The Role of Health Influencers in Shaping Clean and Healthy Living Behaviors on Social Media. *Medic Nutricia : Journal Ilmu Kesehatan*, *22*(2), 311–320. https://cibangsa.com/index.php/medicnutriciajournal/article/view/7809

Safrudin, M. B., Bagaskara, R., Saputri, F. A., Hanani, A., Noor, S. I., & Moura, M. (2026). Literature Review: Media Promosi Kesehatan. *Journal Sains Student Research*, *4*(1), 193–203. https://doi.org/10.61722/jssr.v4i1.7651

Seiler, J., Libby, T. E., Jackson, E., Lingappa, J., & Evans, W. (2022). Social Media–Based Interventions for Health Behavior Change in Low- and Middle-Income Countries: Systematic Review. *Journal of Medical Internet Research*, *24*(4), e31889. https://doi.org/10.2196/31889

Shaluhiyah, Z., Qatrannada, S. A., Kusumawati, A., & Miah, M. S. (2025). The effect of digital health intervention in promoting healthy behavior: A systematic scoping review on strategies to prevent non-communicable diseases. *Dialogues in Health*, *7*, 100258. https://doi.org/10.1016/j.dialog.2025.100258

Wahyuni, S., Arisani, G., Riani, R., & Hanipah, H. (2022). The Role of Social Media as a Health Promotion Strategy. *Jurnal Forum Kesehatan : Media Publikasi Kesehatan Ilmiah*, *11*(2), 86–96. https://doi.org/10.52263/jfk.v11i2.233

Warongan, V. A., Asih, D., & Lubis, M. A. (2025). The Influence of Social Media as a Health Education Tool on Students' Knowledge of Clean and Healthy Living Behavior (PHBS). *Independent Health Journal*, *1*(1), 15–20. https://jurnal.stikesmitrasejati.ac.id/index.php/ihj/article/view/32

Wenas, C. P., & Arsastha, K. (2025). The Role of Social Media in Health Promotion. *Jurnal Riset Rumpun Ilmu Kesehatan*, *4*(2), 352–359. https://doi.org/10.55606/jurrikes.v4i2.5498