

Health Promotion Media and Their Influence on Behavioral Change: A Literature Review on The Role of Social Media in Health Promotion

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ABSTRACT

Purpose: This systematic review examined how social media-based health-promotion interventions are associated with health-related behavioral outcomes across diverse populations and contexts.

Research Method: Following PRISMA 2020, Scopus, PubMed, Web of Science, and ScienceDirect were searched for eligible studies published from January 2020 to May 2026. Forty studies met the inclusion criteria. Risk of bias and methodological quality were evaluated using RoB 2 and appropriate JBI critical appraisal checklists, and findings were synthesized narratively by outcome category.

Results and Discussion: The evidence indicated favorable associations with health literacy, vaccination-related outcomes, physical activity, dietary practices, smoking cessation, mental health awareness, and preventive practices. Interactive communication, peer support, online communities, credible influencers, and tailored messages supported engagement. However, heterogeneous designs and measures prevented causal conclusions, while misinformation, privacy risks, digital inequality, and limited long-term evidence constrained interpretation.

Implications: Health organizations should combine audience-appropriate content with professional oversight, privacy safeguards, misinformation management, and inclusive access. Longitudinal and experimental studies using validated behavioral measures are needed.

Originality: This review distinguishes engagement, knowledge, and intention from self-reported, objectively measured, and sustained behavioral change.

Keywords: social media; health promotion; behavioral change; health communication; systematic review

1. Introduction

Health promotion is a fundamental component of public health that aims to empower individuals and communities to improve their health through informed decision-making and sustainable behavioral changes. The increasing prevalence of non-communicable diseases (NCDs), including cardiovascular diseases, diabetes mellitus, obesity, cancer, and mental health disorders, has become a major global health challenge. These conditions are strongly associated with modifiable behavioral risk factors, including tobacco use, physical inactivity, unhealthy dietary habits, excessive alcohol consumption, and



poor adherence to preventive health measures (World Health Organization [WHO], 2023; Rahelić *et al.*, 2024).

Behavioral change interventions have therefore become central to contemporary public health strategies. Traditional health promotion approaches, including face-to-face counseling, printed educational materials, and mass media campaigns, have contributed significantly to health education and disease prevention. However, these approaches often face limitations in cost, scalability, accessibility, and sustainability, particularly among geographically dispersed populations and in low-resource settings (Kickbusch *et al.*, 2021; Kreps, 2017). These limitations create a practical need for health-promotion channels that can deliver information broadly while facilitating timely interaction with different population groups.

The rapid advancement of digital technologies has transformed health communication and promotion practices globally. The emergence of digital health interventions has enabled healthcare organizations, governments, and public health practitioners to disseminate health information more efficiently and engage larger audiences than ever before. Digital health encompasses various technologies, including mobile health applications (mHealth), telemedicine, wearable devices, artificial intelligence (AI), online health communities, and social media platforms (Mesko, 2022; WHO, 2021). Nevertheless, these technologies differ in their functions, modes of delivery, and mechanisms of user engagement. Accordingly, the present review is restricted to health-promotion activities delivered through social media platforms; mHealth applications, telemedicine, wearable devices, and standalone AI-based technologies are outside its scope unless they are explicitly integrated into a social media intervention.

Among these digital technologies, social media has emerged as one of the most influential communication tools in contemporary society. Social media platforms such as Facebook, Instagram, TikTok, YouTube, WhatsApp, X (formerly Twitter), and LinkedIn allow users to create, share, and interact with content in real time. Unlike traditional communication channels, social media enables bidirectional communication, user-generated content, peer interaction, and community building, making it particularly suitable for health promotion and behavior change interventions (Eppes *et al.*, 2023; König & Suhr, 2023). These platform-specific characteristics distinguish social media interventions from other forms of digital health communication and therefore require focused examination.

Globally, social media use has expanded dramatically over the past decade. According to recent digital development reports, billions of individuals regularly access social media platforms, making these platforms powerful tools for disseminating health information and influencing health-related attitudes and behaviors (World Bank, 2024). The widespread adoption of smartphones and internet connectivity has further enhanced the accessibility and reach of social media-based health promotion initiatives, especially among adolescents and young adults who represent the largest segment of social media users.

The COVID-19 pandemic accelerated the adoption of social media as a public health communication tool. During the pandemic, health authorities worldwide utilized social media to disseminate information regarding infection prevention, vaccination campaigns, disease surveillance, and public health guidelines. Social media became an essential channel for maintaining communication between health institutions and communities when face-to-face interactions were restricted due to lockdowns and social distancing measures (Budd *et al.*, 2020).

Previous studies suggest that social media-based interventions may contribute to different health-related outcomes. Previous research has reported improvements in health literacy, vaccine

acceptance, smoking cessation, physical activity participation, dietary behaviors, mental health awareness, medication adherence, and chronic disease self-management following exposure to social media-based health promotion programs (Grady *et al.*, 2023). Social media platforms have also been used to reach populations that may be difficult to access through conventional health-promotion channels and to facilitate peer support among individuals facing similar health challenges (Ghahramani *et al.*, 2022). However, the reported outcomes range from knowledge and awareness to behavioral intention, engagement, self-reported behavior, and sustained behavioral change. These outcomes represent different levels of evidence and should not be interpreted as scientifically equivalent indicators of intervention effectiveness.

The effectiveness of social media in promoting behavioral change can be explained through several theoretical perspectives. Social Cognitive Theory emphasizes the role of observational learning and social influence in shaping behaviors, suggesting that exposure to positive health behaviors through social media can encourage individuals to adopt similar behaviors (Bandura, 2004). Similarly, the Theory of Planned Behavior proposes that attitudes, subjective norms, and perceived behavioral control influence behavioral intentions, all of which can be affected through social media interactions and communication (Ajzen, 1991). Nevertheless, changes in attitudes, perceived norms, engagement, or behavioral intentions do not necessarily demonstrate actual or sustained behavioral change. The theoretical mechanisms must therefore be interpreted in relation to the outcome measured, the study design, and the duration of follow-up. Despite its considerable potential, the use of social media for health promotion is not without challenges. Concerns regarding misinformation, disinformation, privacy protection, data security, digital literacy disparities, and unequal access to technology continue to pose significant barriers to effective implementation. The rapid dissemination of inaccurate health information through social media platforms may negatively influence public perceptions and behaviors, potentially undermining evidence-based health promotion efforts (Morley *et al.*, 2021; Paakkari & Okan, 2020).

Existing evidence regarding the effectiveness of social media-based health promotion interventions remains fragmented. Many studies focus on specific health topics, target populations, or individual social media platforms, making it difficult to draw comprehensive conclusions regarding their overall effectiveness. Differences in study design, intervention duration, outcome measures, and contextual factors further contribute to heterogeneity within the literature (Eppes *et al.*, 2023; Grady *et al.*, 2023). The available evidence also includes experimental, observational, cross-sectional, and qualitative studies, which provide different levels of support for causal inference. Consequently, findings from these designs cannot be combined conceptually without considering their respective methodological limitations.

A further gap concerns the frequent treatment of knowledge acquisition, behavioral intention, online engagement, self-reported behavior, and objectively measured or sustained behavioral change as comparable outcomes. Knowledge or engagement may represent an intermediate response to health communication, whereas sustained behavioral change requires stronger evidence, appropriate measurement instruments, and adequate follow-up periods. In addition, evidence is distributed across multiple platforms—including Facebook, Instagram, TikTok, WhatsApp, YouTube, Twitter, X, and LinkedIn—each with distinct communication formats and user-interaction mechanisms that may yield different outcomes. Previous reviews have not always made these distinctions sufficiently explicit when evaluating the role of social media in health promotion.



Given the growing importance of social media in public health practice and the increasing demand for evidence-based digital health promotion strategies, a comprehensive synthesis of current literature is necessary. Understanding the evidence concerning the relationship between social media-based health promotion and health-related outcomes can help public health professionals, policymakers, and healthcare organizations develop more effective interventions that leverage digital communication technologies to improve population health outcomes (Kickbusch *et al.*, 2021). Such a synthesis must distinguish evidence of increased knowledge, changes in attitudes or intentions, user engagement, self-reported behavioral responses, and sustained behavioral change while accounting for differences in study design and methodological quality.

Based on these gaps, this systematic literature review addresses the following research questions: (1) how are social media platforms used as health-promotion media across different populations and health contexts? (2) What health-related outcomes are reported following exposure to social media-based health-promotion interventions? (3) To what extent does the available evidence support changes in knowledge, attitudes, intentions, engagement, self-reported behavior, or sustained behavior? Moreover, (4) how do study design, platform characteristics, intervention features, and methodological quality affect the interpretation of these findings?

Therefore, this systematic literature review aims to examine the role of social media as a health-promotion medium and critically evaluate the evidence regarding its association with health-related behavioral outcomes across diverse populations and health contexts. Rather than assuming that all reported outcomes demonstrate behavioral change, the review differentiates knowledge, attitudes, intentions, engagement, self-reported behavior, and sustained behavioral change. Its novelty lies in its platform-specific focus, explicit separation of outcome levels, and interpretation of findings according to study design and methodological quality. This approach is intended to provide a more transparent and methodologically cautious synthesis of social media's contribution to contemporary health promotion.

The remainder of this paper is organized as follows. Section 2 provides a literature review and hypothesis development. Section 3 presents the research method and design. Section 4 provides the results and discussion. Section 5 presents Concluding Remarks and Recommendations.

2. Literature Review and Hypothesis Development

2.1 Social Media as a Health Communication Platform

Social media has become an important health communication platform because it enables healthcare institutions, public health agencies, professionals, and individuals to produce, distribute, and exchange health information without geographic or temporal limitations. Platforms such as Facebook, Instagram, TikTok, YouTube, WhatsApp, and X offer distinctive communication features, including user-generated content, real-time interaction, audiovisual messages, hashtags, comments, sharing functions, and online community formation. These features transform health communication from a predominantly one-way information-delivery process into an interactive exchange in which audiences can respond to, reinterpret, and redistribute health messages. Effective public health communication through such interactive environments requires professionals to possess adequate communication and digital competencies, particularly when delivering timely information and coordinating responses during public health emergencies (Raharjo *et al.*, 2025). So & Kwon (2024) distinguish between active and passive

social media use: active use facilitates discussion, content sharing, and social interaction, whereas passive use enables audiences to observe and access health information circulating within their networks. Ghahramani *et al.*, (2025) further demonstrate that hashtags can increase the visibility and discoverability of health messages, connect related discussions, and strengthen audience engagement in health-promotion campaigns. Consequently, social media functions not merely as a channel for publishing information but also as a communication environment where health knowledge, experiences, and perceptions are collectively produced and circulated.

The characteristics of the message, source, audience, and platform nevertheless influence the effectiveness of social media as a health communication platform. Che & Kim (2024) found that communication strategies adopted by public health agencies on TikTok generated distinct patterns of public sentiment, indicating that message content and presentation should be tailored to the communication context and audience responses. Among adolescents, trust in social media health information involves a complex assessment of the platform, other users, content credibility, privacy, safety, expertise, and verification mechanisms (Freeman *et al.*, 2023). Information quality is therefore essential because widespread dissemination does not necessarily mean the information communicated is accurate or beneficial. Based on an evaluation of WeChat health accounts, Xie *et al.*, (2024) identified a relationship between health-information quality and dissemination performance. However, the value of the content was not automatically reflected in its communication reach. These findings demonstrate that visibility, engagement, and information quality represent different dimensions of social media communication. High numbers of views, likes, comments, or shares may indicate audience exposure and interaction, but they cannot independently confirm comprehension, credibility, or behavioral influence.

Social media influencers have also become prominent actors in digital health communication because their perceived accessibility, authenticity, and personal connection with followers can increase attention to health-related messages. Engel *et al.*, (2024) explain that influencers are important sources of health information for adolescents. However, their limited medical expertise, commercial interests, and promotion of unrealistic or inaccurate content pose substantial communication risks. Similarly, Powell & Pring (2024) found that influencers can produce both positive and negative health outcomes, with effects varying by message type, audience characteristics, and the methodological quality of the available evidence. Health expert content creators may help address these risks by combining professional knowledge with platform-specific communication skills. However, Kaňková *et al.*, (2024) emphasize that even health-related messages delivered by popular content creators may be misleading when the information is inaccurate, oversimplified, or overly generalized. Thus, social media should be understood as a dynamic but contested health communication platform. Its capacity to expand reach, facilitate dialogue, support peer interaction, and personalize messages must be balanced against the risks of misinformation, commercial influence, privacy concerns, unequal digital literacy, and algorithmic amplification. Effective health communication consequently requires credible sources, evidence-based content, transparent disclosure, audience-sensitive presentation, and continuous evaluation of both communication reach and information quality.

2.2 Social Media-Based Health Promotion

Social media-based health promotion refers to the planned use of social networking platforms to disseminate evidence-based health information, increase awareness and health literacy, encourage



preventive practices, and connect target populations with health services or support resources. In the broader healthcare context, continuity of care, effective patient-provider relationships, and culturally competent support are important elements for optimizing health outcomes (Ernawati, 2024). Unlike conventional one-way campaigns, social media enables audience segmentation, real-time interaction, peer-to-peer dissemination, multimedia delivery, and continuous monitoring through indicators such as reach, impressions, views, shares, comments, and click-through rates. Maas *et al.*, (2022) demonstrate that social marketing principles can be incorporated into social media strategies by identifying audience needs, segmenting target groups, reducing perceived barriers, and using local ambassadors to expand the reach of preconception-care messages. Social media can also complement other promotional channels rather than operate as an isolated intervention. Knock *et al.*, (2024), for example, combined Instagram and X outreach with email and in-person activities to disseminate information about a health website to adolescents. This multichannel approach suggests that social media may help sustain audience attention and reinforce information introduced through other channels. However, exposure on social media does not automatically indicate that users understand or apply it.

The effectiveness of social media-based health promotion also depends on the alignment between the platform, content format, target population, and intended outcome. Wishart *et al.*, (2022) found that Instagram and X could distribute youth mental health messages, but users displayed different engagement patterns toward advocacy-based and informational content. Visual and video-based formats may be particularly useful because they combine images, narration, demonstrations, and emotional appeals. Xiao *et al.*, (2024) reported that video-based health promotion showed potential to influence health-related knowledge, attitudes, intentions, and behaviors. However, its effects varied according to message length, credibility, theoretical grounding, audience characteristics, and cultural context. For adolescents, social media may provide low-threshold access to information, motivation, and social support. Nevertheless, Zimmermann & Tomczyk (2025) emphasize that interventions must be age-appropriate, youth-centered, and responsive to risks such as misinformation, harmful content, privacy violations, and unequal digital competencies. Evidence from a Facebook and Instagram campaign targeting parents and carers further shows that social media can achieve substantially broader reach than printed communication when promoting healthy eating, physical activity, and reduced sedentary behavior among children (Cattaneo *et al.*, 2025). However, campaign reach, impressions, and favorable comments remain communication outcomes rather than direct evidence of behavioral change.

Organizational capacity and evaluation quality are therefore crucial to the implementation of social media-based health promotion. Duffett & Thomas (2024) show that health nonprofit organizations use social media to increase awareness, visibility, membership, and access to service-related content, but limited technical skills, funding, leadership, and human resources may constrain implementation. Campaign evaluation must consequently extend beyond platform analytics and distinguish exposure, engagement, knowledge, attitudes, intentions, help-seeking, self-reported behavior, and sustained behavioral change. Draganidis *et al.*, (2024) found that social media mental health campaigns consistently generated engagement, yet relatively few studies measured formal help-seeking or behavioral outcomes, and evaluation benchmarks differed considerably. This evidence cautions against treating likes, views, shares, or comments as equivalent to intervention effectiveness. Overall, social media-based health promotion offers scalable opportunities to reach diverse and potentially underserved populations through tailored, interactive, and multimedia communication. Its contribution is strongest when campaigns are theoretically informed, adapted to platform and audience



characteristics, integrated with complementary communication channels, supported by credible institutions, and evaluated using clearly defined outcomes and appropriate follow-up periods.

2.3 Health-Related Behavioral Change

Health-related behavioral change refers to a measurable modification in actions that influence individual or population health, including smoking cessation, vaccination uptake, physical activity, dietary practices, disease self-management, help-seeking, and responsible information-sharing. In social media research, behavioral change must be distinguished from exposure, engagement, knowledge, attitudes, confidence, and behavioral intention. These outcomes may represent stages or mechanisms preceding action, but they do not independently demonstrate that an actual or sustained behavioral change has occurred. Nazari *et al.*, (2026), for example, found that social media-based vaccination interventions yielded small improvements in knowledge, attitudes, intentions, and confidence but failed to produce a statistically significant increase in actual vaccination uptake. This distinction indicates an intention-behavior gap in which favorable cognitive responses do not necessarily translate into action. Similarly, social media campaigns promoting healthy eating, physical activity, and healthy weight have demonstrated mixed effects across cognitive, behavioral, and anthropometric outcomes (Luo *et al.*, 2024). Therefore, behavioral effectiveness should be evaluated using clearly defined measures, appropriate comparison groups, objective indicators where possible, and follow-up periods sufficient to determine whether the reported change is maintained.

Social media may facilitate behavioral change through multiple mechanisms, including observational learning, goal setting, action planning, problem-solving, behavioral demonstrations, social comparison, peer support, feedback, and reinforcement. Keen *et al.*, (2024) explain that these techniques may support obesity and diabetes management by strengthening self-efficacy, positive outcome expectations, and social support. Behavioral change may also occur progressively rather than immediately. Aljarrah *et al.*, (2025) show that social media can support movement through different stages of smoking cessation, suggesting that readiness, decision-making, and cessation processes should be examined separately from verified abstinence. In youth mental health, digital media may encourage healthier responses by providing education, social connection, risk identification, destigmatization, and pathways to professional resources (Hamilton *et al.*, 2024). Nevertheless, engagement with supportive content does not necessarily demonstrate improved mental health or help-seeking. Raeside *et al.*, (2024) found only small, statistically nonsignificant effects of digital lifestyle interventions on several adolescent mental health and well-being outcomes, while adherence, satisfaction, and engagement were inconsistently reported. These findings underscore the importance of distinguishing between intervention participation and behavioral enactment, as well as sustained health outcomes.

Health-related behavioral change also includes how users evaluate, verify, share, or correct health information online. Sun & Dong (2024) found that issue involvement and information literacy contributed to users' intention to correct health misinformation, with misinformation recognition acting as an explanatory mechanism. However, correction intention remains conceptually different from observed corrective action. Xue *et al.*, (2024) similarly demonstrated that negative emotional appeals and pseudo-authoritative sources increased misinformation-sharing intention, whereas accuracy-nudge labels encouraged verification and reduced misguided trust. Although experimental evidence strengthens causal interpretation, an intention measured immediately after exposure may not represent

actual behavior in natural social media environments. Accordingly, evidence regarding social media and health-related behavioral change should be interpreted in light of study design, outcome type, measurement method, and follow-up duration. Cross-sectional studies can identify associations, whereas randomized or longitudinal studies provide stronger evidence regarding temporal and causal relationships. A rigorous assessment must therefore separate knowledge, attitudes, intention, engagement, self-reported action, objectively measured behavior, and sustained change rather than treating them as equivalent outcomes.

3. Research Method

3.1 Study Design

This study employed a systematic review methodology guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020). The review systematically identified, screened, appraised, and synthesized empirical studies concerning social media-based health promotion. The unit of analysis was a primary study that examined health-promotion activities delivered via Facebook, Instagram, TikTok, YouTube, WhatsApp, Twitter/X, LinkedIn, or other explicitly identified social media platforms. The review protocol was not prospectively registered.

3.2 Research Question

This review addressed the following research question: "How effective are social media-based health-promotion interventions in influencing positive behavioral changes among different populations?"

Effectiveness was assessed by distinguishing seven outcome levels: platform engagement, health knowledge or literacy, attitudes, behavioral intentions, self-reported behavior, objectively measured behavior, and sustained behavioral change. Thus, views, likes, knowledge, and intention were not automatically interpreted as evidence of actual behavioral change.

3.3 Search Strategy

Electronic searches were conducted in Scopus, PubMed, Web of Science, and ScienceDirect. The searches covered English-language journal articles published from 1 January 2020 to 31 May 2026. Titles, abstracts, and keywords were searched using terms representing social media platforms, health promotion, and health-related behavioral outcomes. Terms referring exclusively to mHealth, eHealth, telehealth, wearable devices, and standalone AI chatbots were removed because they fell outside the scope of this review.

The core search string was:

("social media" OR "social networking site" OR Facebook OR Instagram OR TikTok OR YouTube OR WhatsApp OR Twitter OR "X platform" OR LinkedIn) AND ("health promotion" OR "health education" OR "health communication" OR "public health campaign" OR "health intervention*") AND ("behavior change" OR "behaviour change" OR "health behavior*" OR "health behaviour*" OR "health literacy" OR engagement OR intention OR "physical activity" OR diet* OR nutrition OR vaccin* OR smok* OR adherence OR outcome*)**

The syntax was adapted to each database as follows: Scopus used TITLE-ABS-KEY; PubMed used [Title/Abstract]; Web of Science used TS; and ScienceDirect searched titles, abstracts, and keywords. The searches identified 2,145 records, comprising 865 from Scopus, 520 from PubMed, 380 from Web of Science, and 380 from ScienceDirect.

All records were transferred to a standardized screening spreadsheet. Duplicates were identified using DOI, title, author, and publication year and then checked manually. This process removed 425 duplicate records, leaving 1,720 unique records for screening.

3.4 Eligibility Criteria

Studies were included when they:

- Were published between January 2020 and May 2026;
- Were peer-reviewed journal articles written in English;
- Examined health promotion delivered through an explicitly identified social media platform;
- Reported at least one health-related outcome;
- Used an RCT, quasi-experimental, cohort, cross-sectional, mixed-methods, or qualitative design; and
- Were available in full text.

No restrictions were imposed on participants' age, sex, country, or health status because the review aimed to examine different populations and health contexts. Eligible comparison conditions included usual care, no intervention, another communication medium, pre-intervention measurement, or another social media strategy. Qualitative studies were included when they examined perceived behavioral responses, intervention acceptability, barriers, or mechanisms relevant to social media-based health promotion.

The publication period was selected to capture recent evidence concerning contemporary social media platforms and health communication strategies, particularly following the COVID-19 pandemic.

Studies were excluded when they:

- Were reviews, meta-analyses, editorials, conference abstracts, protocols, commentaries, or opinion papers;
- Focused exclusively on clinical treatment without a health-promotion component;
- Did not report a health-related outcome;
- Examined only non-social-media digital interventions;
- Contained insufficient methodological information; or
- Were unavailable in full text.

These criteria ensured that only primary empirical studies directly relevant to the research question were included (Aromataris & Munn, 2020).

3.5 Study Selection

The 1,720 unique records were screened by title and abstract, resulting in the exclusion of 1,610 records. The full texts of the remaining 110 reports were retrieved and assessed against the eligibility criteria. Seventy full-text reports were excluded because they did not assess behavioral outcomes ($n = 18$), did not investigate social media interventions ($n = 25$), were reviews or meta-analyses ($n = 12$), contained

insufficient methodological information ($n = 8$), or were unavailable in full text ($n = 7$). Consequently, 40 primary studies were included in the narrative synthesis.

The author conducted study selection in two sequential rounds. Uncertain records were retained for full-text assessment rather than excluded during title and abstract screening. After the first selection round, all included studies and the recorded reasons for full-text exclusion were rechecked against the eligibility criteria. Because screening was conducted by one author, inter-reviewer agreement and disagreement-resolution procedures were not applicable.

3.6 Data Extraction

Data were extracted using a standardized form adapted from previous systematic reviews of digital health promotion (Grady *et al.*, 2023; Eppes *et al.*, 2023). The extracted data comprised:

- Author and publication year;
- Country and study design;
- Population characteristics and sample size;
- Social media platform and health topic;
- Intervention or exposure characteristics;
- Comparison condition;
- Intervention duration and follow-up period;
- Outcome definition and measurement instrument;
- Effect size, confidence interval, and exact statistical result when reported; and
- Principal findings.

For qualitative studies, participant characteristics, data-collection methods, analytical procedures, and principal themes were extracted. Each completed extraction form was checked against the original article in a separate verification round. A study-level characteristics table presenting all 40 studies individually was prepared to allow verification of the evidence used in the synthesis.

2.7 Quality Assessment

Randomized controlled trials were assessed using the Cochrane Risk of Bias Tool Version 2 (RoB 2). The assessment covered bias arising from randomization, deviations from intended interventions, missing outcome data, outcome measurement, and selection of reported results (Higgins, 2019). Each domain and overall assessment were classified according to the RoB 2 categories of "low risk," "some concerns," or "high risk."

Observational, cohort, cross-sectional, quasi-experimental, and qualitative studies were assessed using the applicable Joanna Briggs Institute critical appraisal checklist (Aromataris & Munn, 2020). Each checklist item was recorded as "yes," "no," "unclear," or "not applicable." The JBI results were not converted into arbitrary high-, moderate-, or low-quality categories because the instruments do not prescribe universal percentage thresholds. Therefore, the unsupported statement that 24 studies were high quality and 16 were moderate quality was removed.

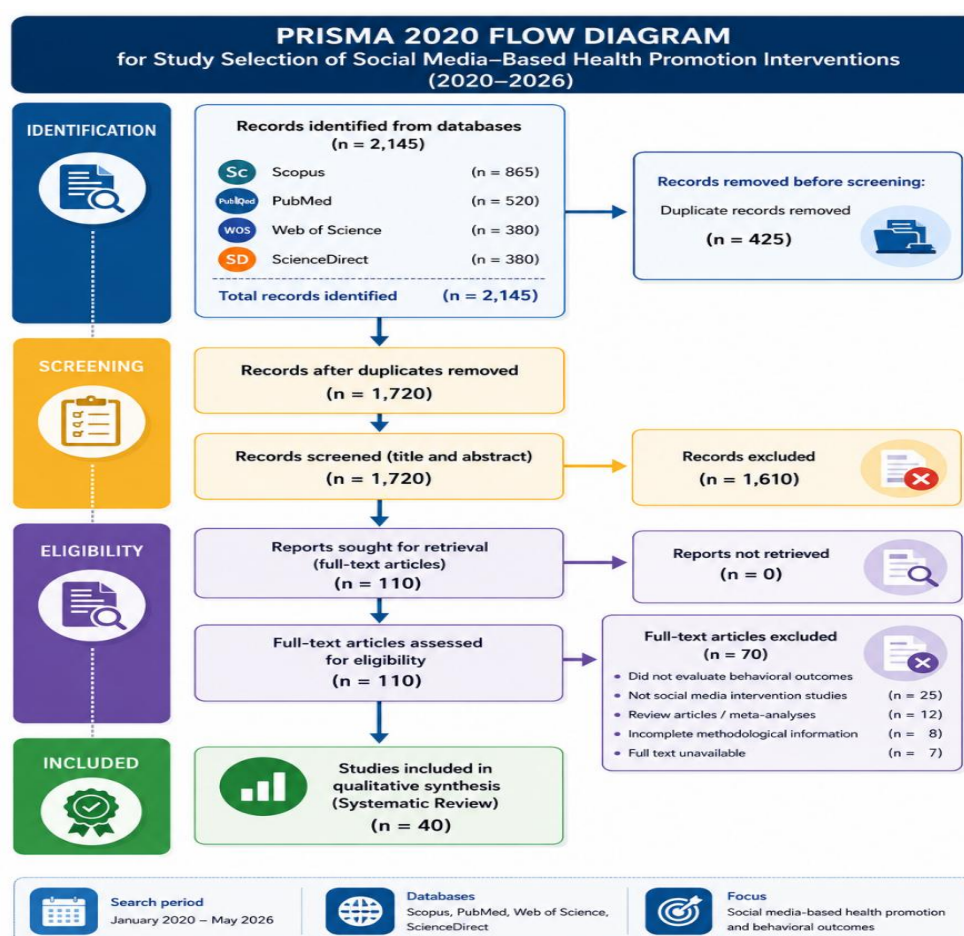
Quality appraisal was completed in two rounds. Study-level and domain-level judgments were reported in a separate appraisal table. Studies were not excluded solely based on an overall quality label; instead, risk-of-bias judgments were considered when determining the weight and certainty assigned to their findings (Peters *et al.*, 2021).

2.8 Data Synthesis

A narrative synthesis was used because the included studies differed in design, population, platform, health topic, intervention, outcome instrument, and follow-up period. A meta-analysis was not conducted because these differences made statistical pooling inappropriate. Studies were grouped according to seven outcome categories: (1) reach and engagement; (2) knowledge and health literacy; (3) attitudes, beliefs, and confidence; (4) behavioral intention; (5) self-reported behavior; (6) objectively measured behavior; and (7) sustained behavioral change. Quantitative findings were summarized using effect sizes, confidence intervals, group differences, and exact statistical results when reported. Qualitative findings were used to explain acceptability, mechanisms, barriers, and contextual influences but were not interpreted as evidence of intervention effectiveness.

Results were also interpreted in accordance with the study design. RCT and quasi-experimental evidence was considered separately from cross-sectional, observational, and qualitative evidence. Causal language was used only when supported by an appropriate experimental design, whereas findings from non-experimental studies were described as associations or indications.

2.9 PRISMA Flow Diagram



Source: Authors' study-selection process (2026).

Figure 1. PRISMA 2020 flow diagram for the selection of social media-based health-promotion studies, January 2020–May 2026.

Figure 1 presents the PRISMA 2020 study-selection process. The database searches identified 2,145 records. After removing 425 duplicates, 1,720 records were screened, 110 full-text reports were assessed, and 40 primary studies were included in the final narrative synthesis. The diagram should be displayed at sufficient size and resolution to ensure that all exclusion categories and numerical information are clearly readable.

4. Results and Discussion

4.1 Analysis Results

4.1.1 Study Selection and General Characteristics

The database searches identified 2,145 records. After 425 duplicate records were removed, 1,720 titles and abstracts were screened, and 1,610 records were excluded. The full texts of 110 reports were assessed for eligibility. Seventy reports were excluded because they did not evaluate behavioral outcomes ($n = 18$), did not examine social media interventions ($n = 25$), were reviews or meta-analyses ($n = 12$), contained insufficient methodological information ($n = 8$), or were unavailable in full text ($n = 7$). Consequently, 40 primary studies were included in the narrative synthesis.

The included studies were published between 2020 and May 2026 and were conducted in the United States, United Kingdom, Canada, Australia, China, Indonesia, Brazil, and South Korea. Their designs included randomized controlled trials, quasi-experimental studies, cohort studies, cross-sectional studies, and mixed-methods studies. Study populations included adolescents, adults, older adults, pregnant women, and patients with chronic diseases. Reported sample sizes ranged from 120 to 15,000 participants, while intervention or observation periods ranged from four weeks to 24 months. Facebook, Instagram, TikTok, WhatsApp, YouTube, and Twitter/X were the principal platforms investigated.

Table 1. Aggregate Characteristics of the Included Studies

Characteristic	Findings
Total studies	40
Publication period	January 2020–May 2026
Countries	United States, United Kingdom, Canada, Australia, China, Indonesia, Brazil, and South Korea
Study designs	RCT, quasi-experimental, cohort, cross-sectional, and mixed methods
Population groups	Adolescents, adults, older adults, pregnant women, and patients with chronic diseases
Sample-size range	120–15,000 participants
Intervention/follow-up range	4 weeks–24 months
Platforms	Facebook, Instagram, TikTok, WhatsApp, YouTube, and Twitter/X
Health topics	Vaccination, physical activity, nutrition, smoking cessation, mental health, and disease prevention

The characteristics in Table 1 provide an aggregate description only. Study-level characteristics—including authors, year, design, population, platform, intervention, comparator, outcome instrument, follow-up period, effect estimate, and risk-of-bias judgment—should be reported for each of the 40 studies in a separate supplementary table.

4.1.2 Distribution of Outcome Categories

The outcomes reported by the included studies were heterogeneous and were therefore classified according to their scientific meaning. Reach, impressions, views, likes, comments, and shares were categorized as platform-engagement outcomes. Knowledge and health literacy were treated as cognitive outcomes, while acceptance, confidence, and intention were classified as psychosocial or pre-behavioral outcomes. Self-reported practices, objectively measured actions, and sustained behavior assessed at follow-up were treated as distinct behavioral outcomes. A study could address more than one health topic or outcome; therefore, the frequencies presented below are overlapping and do not sum to 40.

Table 2. Distribution of Topics and Reported Outcomes

Topic	Number of studies	Outcomes reported
Health literacy	27	Knowledge, understanding, information evaluation, and application
Physical activity	15	Exercise participation, activity level, and sedentary behavior
Vaccination	14	Knowledge, confidence, acceptance, intention, hesitancy, and uptake
Healthy dietary behavior	13	Nutrition knowledge, food choices, and self-reported dietary practices
Smoking cessation	10	Readiness to quit, cessation intention, quit attempts, and abstinence
Influencer-based promotion	8	Reach, engagement, message acceptance, and behavioral intention

Because study-level effect estimates, confidence intervals, and exact statistical results were not consistently available in the reported synthesis, these frequencies indicate the number of studies addressing each topic rather than the number demonstrating statistically significant effects.

4.1.3 Health Literacy Outcomes

Health literacy was the most frequently examined outcome, appearing in 27 studies. The reported measures covered participants' ability to access, understand, evaluate, and apply health information. Interventions commonly used short educational videos, infographics, interactive quizzes, live-streaming sessions, and opportunities to communicate with health professionals. TikTok and Instagram were frequently used to deliver information on disease prevention, nutrition, reproductive health, and vaccination (Eppes *et al.*, 2023; König & Suhr, 2023).

The studies reported outcomes such as knowledge scores, comprehension, perceived credibility, information-evaluation skills, and self-reported ability to use health information. These outcomes were retained as measures of health literacy and were not interpreted as direct evidence of behavioral change. The evidence also differed in design: experimental studies assessed changes following exposure to the intervention, whereas cross-sectional and qualitative studies described associations, perceptions, or user experiences.

4.1.4 Vaccination-Related Outcomes

Fourteen studies examined vaccination-related outcomes. These studies assessed vaccine knowledge, confidence, acceptance, intention, hesitancy, and actual uptake. The interventions employed visual

storytelling, expert testimony, interactive content, evidence-based messages, and influencer-supported communication. Greater exposure to credible information was generally associated with more favorable vaccine-related knowledge, attitudes, or intentions (Budd *et al.*, 2020). However, knowledge, confidence, acceptance, intention, and verified vaccination uptake were treated as separate outcomes. Evidence of improved knowledge or willingness to receive a vaccine was not interpreted as evidence of vaccination. Several studies also identified exposure to misinformation and conspiracy narratives as being associated with vaccine hesitancy and lower trust in public health institutions (Paakkari & Okan, 2020; WHO, 2023). Because the evidence included experimental and observational designs, the findings support different levels of inference and do not uniformly establish causal effects.

4.1.5 Physical Activity Outcomes

Fifteen studies investigated physical activity promotion. The reported outcomes included exercise participation, frequency or duration of physical activity, reduction in sedentary behavior, intervention adherence, and engagement with fitness-related content. Common intervention components included online fitness communities, virtual exercise challenges, progress sharing, peer-support groups, reminders, competitions, rankings, badges, and rewards. The findings indicated that social support, observational learning, accountability, and gamification were commonly incorporated into physical activity interventions. Nevertheless, platform participation, challenge completion, and self-reported exercise were distinguished from objectively measured physical activity. Only findings supported by an appropriate comparator, validated measurement, and follow-up could be interpreted as evidence of behavioral change or maintenance.

4.1.6 Dietary Outcomes

Thirteen studies examined nutrition and dietary outcomes. Their interventions included nutrition education, healthy-recipe content, visual food information, and online dietary-support communities. Reported outcomes included nutrition knowledge, awareness of dietary recommendations, fruit and vegetable consumption, sugary-drink intake, and self-reported food choices. Instagram and YouTube were commonly used because their visual formats supported demonstrations of food selection and preparation. The evidence also identified competing content within the same platforms. Participants could simultaneously encounter evidence-based nutrition messages, unhealthy food marketing, and misleading dietary claims. Consequently, exposure to nutrition content was not assumed to generate healthier eating behavior. Knowledge, dietary intention, self-reported intake, and objectively measured consumption were interpreted separately.

4.1.7 Smoking-Cessation Outcomes

Ten studies evaluated social media-based smoking-cessation strategies. The reported outcomes included readiness to quit, intention to quit, quit attempts, self-reported abstinence, and sustained abstinence. Intervention components included peer-support groups, behavioral counseling, motivational messages, digital reminders, shared experiences, and cessation success stories. These outcome levels were not treated as interchangeable. An intention or attempt to quit represented a pre-behavioral or initial behavioral response, whereas sustained cessation required abstinence over a specified follow-up period and, where available, biochemical verification. The reviewed evidence

suggested that social support and self-efficacy were frequently proposed as mechanisms supporting cessation, but causal conclusions depended on the design and measurement procedures of each study.

4.1.8 Influencer-Based Health-Promotion Outcomes

Eight studies examined influencer-based health promotion. Their outcomes primarily involved reach, engagement, perceived authenticity, trust, message acceptance, and behavioral intention. Influencer-delivered messages frequently achieved substantial engagement among adolescents and young adults because audiences perceived some content creators as relatable or familiar (Eppes *et al.*, 2023). Nevertheless, high reach or engagement did not establish that users changed their behavior. The findings also identified risks related to commercial interests, insufficient professional expertise, oversimplification, and misinformation. Influencer-based evidence was therefore interpreted according to source credibility, message accuracy, outcome measurement, study design, and the involvement of qualified health professionals (Paakkari & Okan, 2020; WHO, 2021).

4.1.9 Methodological Quality and Risk of Bias

The previous classification of 24 studies as high quality and 16 as moderate quality was removed because no transparent scoring rule, study-level judgments, or domain-level assessments were provided. RoB 2 findings should be reported for each randomized trial using the categories "low risk," "some concerns," and "high risk." JBI findings should be reported at the item level as "yes," "no," "unclear," or "not applicable." Accordingly, no aggregate claim regarding the methodological quality of the 40 studies is made in this Results section. Interpretation of the evidence should instead refer to the study-level RoB 2 and JBI assessments, particularly weaknesses involving participant selection, confounding, self-reported outcomes, missing data, and selective reporting. (Aromataris & Munn, 2020) (Aromataris & Munn, 2020; Higgins *et al.*, 2022).

4.2 Discussion

The findings indicate that social media has considerable potential as a health-promotion medium across different populations and health contexts. The included studies most frequently examined health literacy, physical activity, vaccination-related outcomes, dietary behavior, and smoking cessation. This pattern is broadly consistent with previous research showing that social media can extend the reach of health information and support audience engagement with preventive-health messages (Eppes *et al.*, 2023; Grady *et al.*, 2023). Nevertheless, the findings should not be interpreted as demonstrating that social media consistently causes behavioral change. The evidence comprised randomized controlled trials, quasi-experimental studies, cohort studies, cross-sectional studies, and mixed-methods research, which provide different levels of support for causal inference. Moreover, the reported outcomes ranged from knowledge, engagement, attitudes, and behavioral intentions to self-reported practices and sustained behavioral change. Therefore, the evidence more appropriately suggests that social media interventions are associated with favorable health-related outcomes. In contrast, the magnitude and durability of these outcomes remain dependent on the study design, intervention characteristics, population, and outcome measurement.

The communicative features of social media may explain the prominence of health literacy outcomes. Short videos, infographics, live sessions, comments, and content-sharing functions can

simplify complex information and permit repeated exposure to health messages. Social media also supports bidirectional communication, enabling users to request clarification, communicate with health professionals, and discuss health information within online communities. These characteristics may make health messages more accessible and relevant than conventional one-way communication, particularly for audiences who regularly use digital platforms (Kickbusch & Agrawal, 2021; Kreps, 2020). However, improved exposure, message recall, or understanding should not be treated as equivalent to behavioral change. Health literacy is a potential antecedent of behavior, but whether knowledge is translated into action depends on additional factors, including motivation, perceived risk, access to services, social support, and environmental constraints. Accordingly, the relatively frequent reporting of health-literacy outcomes represents encouraging, though primarily proximal, evidence of intervention effectiveness.

The findings concerning vaccination, physical activity, healthy dietary practices, and smoking cessation can be interpreted through social and behavioral mechanisms. Social media enables peer support, observational learning, social comparison, feedback, and the formation of perceived social norms. From the perspective of Social Cognitive Theory, users may develop self-efficacy by observing relevant role models, receiving encouragement, and viewing the progress of other community members (Bandura, 2004). The Theory of Planned Behavior similarly proposes that attitudes, subjective norms, and perceived behavioral control contribute to behavioral intention and subsequent action (Ajzen, 1991). Interactive campaigns, virtual challenges, peer-support groups, testimonials, and influencer-delivered messages may activate these mechanisms by making recommended behaviors appear achievable and socially supported. Nevertheless, the results do not establish that these mechanisms operated consistently across all included studies. Engagement indicators such as views, likes, shares, or comments demonstrate exposure and audience response, but they do not independently confirm changes in objectively measured behavior or long-term health outcomes.

Personalization may further influence how audiences respond to social media-based health promotion. Tailored messages can address population characteristics, health needs, language, risk perceptions, and stages of behavioral readiness, potentially making health information more relevant than generic messages. Digital analytics and artificial intelligence may support audience segmentation and adaptive content delivery in future interventions (Mesko, 2022; Nazir *et al.*, 2022). However, personalization should be interpreted as a potential intervention mechanism rather than evidence of effectiveness in itself. Its benefits depend on the accuracy of audience data, the transparency of algorithmic processes, and adequate protection of personal information. Future studies should therefore compare tailored and non-tailored approaches using clearly defined behavioral outcomes, validated measurement instruments, and sufficiently long follow-up periods. Such comparisons are necessary to determine whether personalization produces behavioral improvements beyond increasing short-term engagement.

The findings must also be considered alongside the risks associated with social media environments. The same features that facilitate the rapid distribution of health information can accelerate the circulation of misinformation, unverified advice, and commercially motivated content. Exposure to contradictory information may reduce trust in health institutions and weaken the influence of evidence-based campaigns. Privacy concerns and the collection of personal data may also discourage participation, particularly when intervention governance and data-use procedures are unclear (Morley *et al.*, 2020; Odone *et al.*, 2023). In addition, digital inequality may limit the reach of interventions among people with restricted internet access, inadequate devices, limited digital literacy, disabilities, or



language barriers. Consequently, high platform reach should not automatically be interpreted as equitable access. Collaboration among public health institutions, healthcare professionals, policymakers, platform providers, and community organizations is required to strengthen content verification, privacy safeguards, accessibility, and digital inclusion.

The sustainability of the reported outcomes remains uncertain because the included studies differed considerably in design, intervention duration, population, platform, comparator, and outcome measurement. Most available findings concerned short- or medium-term responses, whereas evidence of sustained behavioral change was more limited (WHO, 2023; Zangger *et al.*, 2023). Interpretation is further constrained by the inclusion of observational and cross-sectional evidence, reliance on self-reported outcomes in some studies, and the absence of sufficiently comparable effect estimates for quantitative pooling. Differences between knowledge acquisition, intention, engagement, self-reported behavior, objectively measured behavior, and sustained change should therefore remain explicit. Future research should prioritize adequately powered experimental or longitudinal designs, report effect sizes and confidence intervals, use validated and objective behavioral measures where feasible, and assess intervention effects after the active campaign has ended. Overall, social media should be regarded as a potentially valuable component of health-promotion strategies rather than a universally effective or independently causal solution for behavioral change.

5. Concluding Remarks and Recommendation

This systematic review examined how social media-based health-promotion interventions are associated with health-related behavioral outcomes across different populations and contexts. Following the PRISMA 2020 framework, 40 studies published between January 2020 and May 2026 were identified and synthesized narratively. The evidence indicates that social media can support the dissemination of health information, audience engagement, peer interaction, and access to health-promotion resources. Favorable outcomes were reported in health literacy, vaccination-related attitudes and intentions, physical activity, dietary practices, smoking cessation, mental health awareness, and preventive practices. However, these findings varied according to study design, population, platform, intervention characteristics, and outcome measurement. Because the evidence included experimental, observational, cross-sectional, qualitative, and mixed-methods studies, the findings indicate an association or potential contribution rather than establishing that social media independently causes behavioral change.

Theoretically, this review clarifies that the potential value of social media extends beyond information delivery and involves mechanisms such as observational learning, perceived social norms, peer support, self-efficacy, and community participation. Its practical contribution lies in identifying interactive content, credible communication, audience-appropriate messages, peer communities, and collaboration with qualified health professionals as relevant components of social media-based health promotion. For policymakers and public health organizations, the findings emphasize the need to integrate social media into broader health-promotion programs while establishing standards for content accuracy, privacy protection, accessibility, misinformation management, and digital inclusion. The originality of this review lies in distinguishing communication outcomes—such as reach, engagement, knowledge, and intention—from self-reported, objectively measured, and sustained behavioral outcomes.



This review has several limitations. Considerable heterogeneity in study designs, populations, platforms, intervention durations, comparison groups, and outcome instruments prevented direct comparison and quantitative pooling of the findings. Some studies relied on self-reported outcomes or short follow-up periods, limiting conclusions about objective and sustained behavioral change. Restricting eligibility to English-language, peer-reviewed, full-text publications may also have introduced language and publication bias. At the same time, the single-reviewer screening and extraction process may have increased the risk of selection or interpretation errors despite repeated checks. Furthermore, differences in methodological quality and risk of bias require that the findings be interpreted with caution. Future research should employ adequately powered randomized or longitudinal designs, validated behavioral measures, appropriate comparison groups, and longer post-intervention follow-up. Studies should report effect sizes, confidence intervals, exact statistical results, intervention exposure, attrition, and platform-specific implementation details. Researchers should also distinguish consistently between engagement, knowledge, attitudes, intentions, self-reported practices, objectively measured behavior, and sustained behavioral change. Comparative studies across platforms and population groups are needed to determine which intervention components work, for whom, under what conditions, and for how long. Future reviews should use independent screening and appraisal by at least two reviewers, report study-level characteristics and risk-of-bias judgments, and maintain a complete, verified reference list for all included studies.

Statement of Use of Generative AI

During the preparation of this work, the author used generative artificial intelligence tools to support the scientific writing process. Grammarly was used to check grammar, refine writing style, and improve clarity in scientific writing. All interpretations, analyses, and conclusions presented in this study are the sole responsibility of the author.

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