# Impacts of Using Social Media in Promoting Public Health Initiatives: Systematic Literature Review

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## Abstract

*The global adoption of social media has transformed how public health initiatives are communicated and implemented, hence offering new channels that reach diverse populations thereby driving engagement. Social media platforms like X, Instagram, Facebook, and TikTok have been largely utilized to promote public health campaigns on various issues ranging from awareness to mental health, vaccination, disease outbreak and advocacy. Previous research has focused on short term campaigns on metrics like shares, likes that do not capture fully the impact on actual health outcomes. This study aims to evaluate the effectiveness of utilizing social media in promoting public health initiatives and to assess how digital platforms can influence health behaviors, particularly during times of health crisis like pandemics. The study also examines the challenges in maintaining the credibility of public health information and mitigating the spread of misinformation. The study contributes to the growing theoretical field by expanding an understanding of the role of digital communication in the public health interventions. Policy makers can utilize the insights in the creation of regulations which maximize on the positive impacts of digital health communication while minimizing on its risks that include privacy concerns and misinformation. Social media can be effective in increasing public awareness and knowledge of health issues, especially, when the campaigns are tailored to particular target audiences and use interactive and engaging content. Public health campaigns that have been successful on social media leverage on user generated content, influencer partnerships and real time communication so as to foster community engagement. However, disparities like digital access disparities and misinformation limit the effectiveness of the campaigns.*

***Key Words**: Social Media, Misinformation, Public Health Promotion, Health Communication*

## 1.0 Introduction

The internet and the use of social media in promoting public health initiatives have become an increasingly prevalent area of research in the recent past. The rapid proliferation of the use of social media platforms has altered the public health communication landscape providing opportunities to various health organizations to engage with diverse populations on a global landscape. The increase of users and their demand in consumption of information on these platforms continues to soar. This digital revolution has prompted Institutions ranging from government to non-governmental organizations to leverage on social media platforms like Facebook, Instagram, and X (formerly Twitter) in the dissemination of health information, and promotion of health initiatives, such as disease prevention, vaccination campaigns, and healthy lifestyle promotion. Recent statistics indicate that 67 % of internet users are active on social networking sites, with Facebook alone boasting 1.1 billion

monthly active users earlier this year. Moorhead et al. (2013) emphasize that social media offers a new dimension to health care, potentially improving health outcomes through collaboration and social interaction.

COVID-19 pandemic affirmed the vital role of social media in public health communication, as various health authorities worldwide used these platforms to communicate real-time updates, combat misinformation, and promote preventive measures. For instance, The World Health Organization's (WHO) TikTok account, which was launched in February 2020, garnered millions of followers within months, further affirming the potential reach of social media for health messaging. Additionally, the Centers for Disease Control and Prevention (CDC)'s use of X to share COVID-19 guidelines and updates highlighted the agility of social media in crisis communication.

Despite these successes, the use of social media in public health promotion is not without challenges. The rapid spread of health misinformation, which is often fueled by algorithm-driven content recommendation systems, poses a significant challenge to public health efforts. A study by the MIT Initiative on the Digital Economy found that false news stories are 70% more likely to be retweeted than true stories, highlighting the virility of misinformation on social platforms (Hsu, 2022). Additionally, concerns about data privacy and the potential for social media addiction have raised ethical questions about the extensive use of these platforms for health promotion.

The impact of social media on health behaviors and outcomes remains a subject of debate within the scientific community. While some studies suggest that social media interventions can lead to positive health behavior changes, others argue that the effects are often short-lived or limited to specific demographics. A systematic review by scholars Cheng et al. (2023) found mixed results regarding the long-term impact of social media-based health interventions, emphasizing the need for more rigorous evaluation methods. Furthermore, the digital divide remains a significant barrier to the equitable distribution of health information through social media. According to the International Telecommunication Union (2016), approximately 2.9 billion people still have no internet access, predominantly in low- and middle-income countries. This disparity raises concerns about the potential for social media-based health initiatives to exacerbate existing health inequalities.

Given the aforementioned complexities, there is a need for a comprehensive evaluation of the effectiveness of social media in promoting public health initiatives. While previous research studies have focused on short-term metrics like engagement rates and reach, there is a gap in understanding how these digital interactions translate

into tangible health outcomes and sustained behaviour change. Furthermore, the swiftly evolving nature of social media platforms and user behaviours necessitates an ongoing assessment of the best practices in the digital health communication space.

This study aims to address these knowledge gaps by evaluating the effectiveness of social media in promoting public health initiatives and assessing its influence on health behaviours, particularly during health crises.

Social media platforms have become increasingly prominent in public health promotion efforts due to their extensive reach and engagement potential (Lwin et al., 2020). However, the effectiveness of social media campaigns in promoting public health initiatives remains a subject of ongoing research and debate. This literature review aims to synthesize recent studies to better understand the theoretical underpinnings, current trends, and empirical evidence surrounding social media campaigns in public health promotion.

**Theoretical Framework**

The SCT by Bandura (1986) places a strong focus on how social factors impact external and internal reinforcement. The theory also focuses on how individuals acquire and uphold their behaviors through observation, learning and imitation of their peers. This will be more practical in learning behavior change by the utilization of social media by the target group of the study (Paige et al., 2020).

Theoretical frameworks such as the social cognitive theory and the elaboration likelihood model have been applied to understand how individuals process and engage with health information on social media platforms (Hinyard & Kreuter, 2017). These frameworks emphasize the importance of factors such as message credibility, source characteristics, and audience receptivity in shaping health behavior outcomes.

**Observational learning and social modelling.**

The model suggests that individuals learn by observing, especially those they identify with or perceive as credible. On social media platforms, the users are exposed to a range of health related content that include, videos, posts, blogs and testimonials from organizations and peers. Through observational learning, the social media users may acquire new health related attitudes, knowledge, and behaviors by emulating the actions others portrayed on social media. For instance, seeing friends posting while doing physical activity or healthy eating habits might motivate one to adopt the same behavior.

## 2.0 Literature Review

Recent studies have highlighted the diverse strategies employed in social media campaigns for public health promotion, including targeted messaging, interactive content, and influencer partnerships (Chou et al., 2020; Maher et al., 2021). Social media platforms offer unique opportunities for real-time communication, community building, and behaviour change interventions, but they also present challenges such as information overload and algorithmic biases (Gough et al., 2019). Health mass media campaigns have a positive impact on people leading to behavior change. Thus, social media campaigns can influence attitudes, behaviors and increase awareness about health (Noar, 2006).

According to Murray et al. (2005), certain health communication applications have improved crucial aspects like clinical and behavioral outcomes, as well as user knowledge (Korda & Itani, 2011). The emotional motivation provided by social media applications is considered beneficial and constructive, contributing to positive changes in behavior and an increase in public awareness—an evident indication of the success and effectiveness of social media platforms in promoting public health.

Additionally, the utilization of social media in the promotion of health campaigns is also of high interest to not only public health institutions but to health professionals, policy setters, marketers, regulators and health enthusiasts (Stellefson, et al., 2020). The study further delved that the health initiatives are not implemented in isolation but as complementary to each other, thereby creating synergies that bring forth a blurring effect. The synergies, make it impossible to isolate impacts of social media on an individual, thereby making the impact complimentary or marginal to the other factors.

The effectiveness of using social media platforms in promoting public health can have different influences on individuals, particularly concerning age. Notably, older adults may be significantly influenced by social media campaigns compared to their middle aged counterparts, (Wilson et al., 2021). A recent study on the influence of social media campaigns sought to assess the impact of multimedia campaign by examining pre-test and post test results, considering their level of knowledge, attitude and Practice. The study by Kite et al., (2023) found that there was a high level of agreement and exposure to the messages that were shared on social media platforms like Facebook, Twitter and WhatsApp.

Equally, Ruppel and Rains (2018) discussed the opportunities and challenges of health communication in the age of social media after an extensive review of the journey of health communication since the days of print

media, brochures and public announcements. The authors argue that social media offers new and innovative ways for healthcare professionals to engage with audiences through visually appealing content like videos, infographics and other multimedia. They further argue that the advent of social media, has made health promotion more interactive, accessible and engaging.

Scholars Roy and Malloy (2023 p. 276), findings indicated that Health organizations, policy makers and health advocates can use social media to support their health promotion and policy change efforts in diverse ways. For instance, various applications can be used to amply health messages by sharing the user generated posts which align with a particular policy initiative or health promotion campaign. By leveraging real time social media insights, policy makers can identify emerging health trends, engage with stakeholders and further evaluate the effectiveness of the promotion campaigns and policy changes hitherto.

Furthermore, in unprecedented degree, Schillenger et al., (2020) in their study 'from infodemics to health promotion,' found out that the popularity and sophistication of social media platforms have translated to health discourse becoming ubiquitous, and content becoming creative, innovative and engaging ,and communications further becoming scalable and rapidly spreadable by influencers. This has given social media control over the content and information flow of communication.

Empirical research conducted in the past four years has provided valuable insights into the effectiveness of social media campaigns in promoting various public health initiatives. For example, a study by Fu et al. (2020) examined the impact of a social media campaign on COVID-19 prevention behaviors, finding that personalized messaging and interactive features were associated with greater adherence to preventive measures.

Similarly, another study by the Pew Research Center (2022) explored the role of social media in vaccine hesitancy and found that exposure to misinformation on social media platforms was significantly associated with lower vaccination intentions. Equally, Wantland, et al., (2004) in their study on the effectiveness of web based and non-web based interventions on behavior outcomes noted that web based interventions positively affected users, with notable emphasis on increased public consciousness and behavior change. Particularly in terms of behavior change, seat belt usage, oral health practices and alcohol consumption reported the highest rates of positive impact from social media campaigns. The improvement was however, not statistically significant.

With the rapid increase of the internet and subsequent use of mobile phones, and with the merging popularity of social networks, Gu et al., (2019) surveyed the adults in East China and how they utilize social media-based

health management systems (SocialHMS). The systems have been used widely in patient decision making, health information inquiries and chronic disease management. They analyzed that the system provides convenient ways for people to access health services. The study further explored factors that influence health a sustained health engagement of the SocialHMS. Results from the study provided a broad understating of the sustained use of the system by the users and researchers for healthcare and information systems. From the study, the authors suggest that social media can improve healthcare accessibility based on individual experiences only if the users are matched to content that is tailored to their needs.

## 3.0 Methodology

This study used an integration of both qualitative and quantitative research methods to avoid the risks of leaving out any potential information that could be useful and to ensure a comprehensive foundation for evidence-based policy formulation. Reliance on either qualitative or quantitative research has a risk of overlooking significant factors that might lead to inaccurate assessments. The study used a systematic literature review matrix. Cross sectional surveys, interviews and qualitative studies were conducted among patients who used social media to access health information for their health conditions.

This study used various databases, including Google Scholar, the Directory of Open Access Journals, SAGE open, and Glob ethics. The search string included social media, Health, Facebook, Twitter, YouTube, OR LinkedIn OR Promotion OR Initiatives. The reviewed journals included a range from 2015 to 2023 and strictly on only a peer reviewed scholarly journal article, with available full text written in English added to the search requirement. The study used systematic sampling method. The initial search retrieved 50 journal articles.

The key words used included; social media analytics for health, health promotion, health initiatives, public health campaigns , health and social media, social media and public health, impact of social media on health behavior, social media strategies for health promotion, social media engagements and health outcomes and health communication on social media and Digital health interventions on health .

### Inclusion and Exclusion Criteria

Of the 50 journals initially identified using the search criteria, 10 proved irrelevant when their titles and relevance were further examined. The abstracts of the remaining 40 papers were then examined, resulting in 30 papers remaining being examined in full. Of these 10, papers were excluded after reading the full texts and finding them

unsuitable for the review. The remaining 20 papers were then read and their quality assessed. Out of these, 10 of the papers were excluded because they did not meet the quality assessment criteria and the remaining 10 were included in the study.

Items retrieved from the databases were further screened. An article was excluded if it was a report, a non-reviewed journal, a dissertation, if it focused on the negative impacts of social media or described the use of social media without stating how it is used for health purposes or examining the use of social media in general without it being in the health context.

Journals were included in the study if they identified any social media use for health reasons, like studies used to seek information about obesity through an analysis of Twitter posts. After the review of titles, full text, and abstracts, 10 journals were included in the final sample of the study.

**Data Extraction**

All the 10 papers were independently assessed and reviewed by two assessors and a data extraction form developed using the systematic literature review matrix. Data extraction forms were used to record general information including the publication details, title, and specific information such as the aim of the paper, the relevant findings, study location and study population.

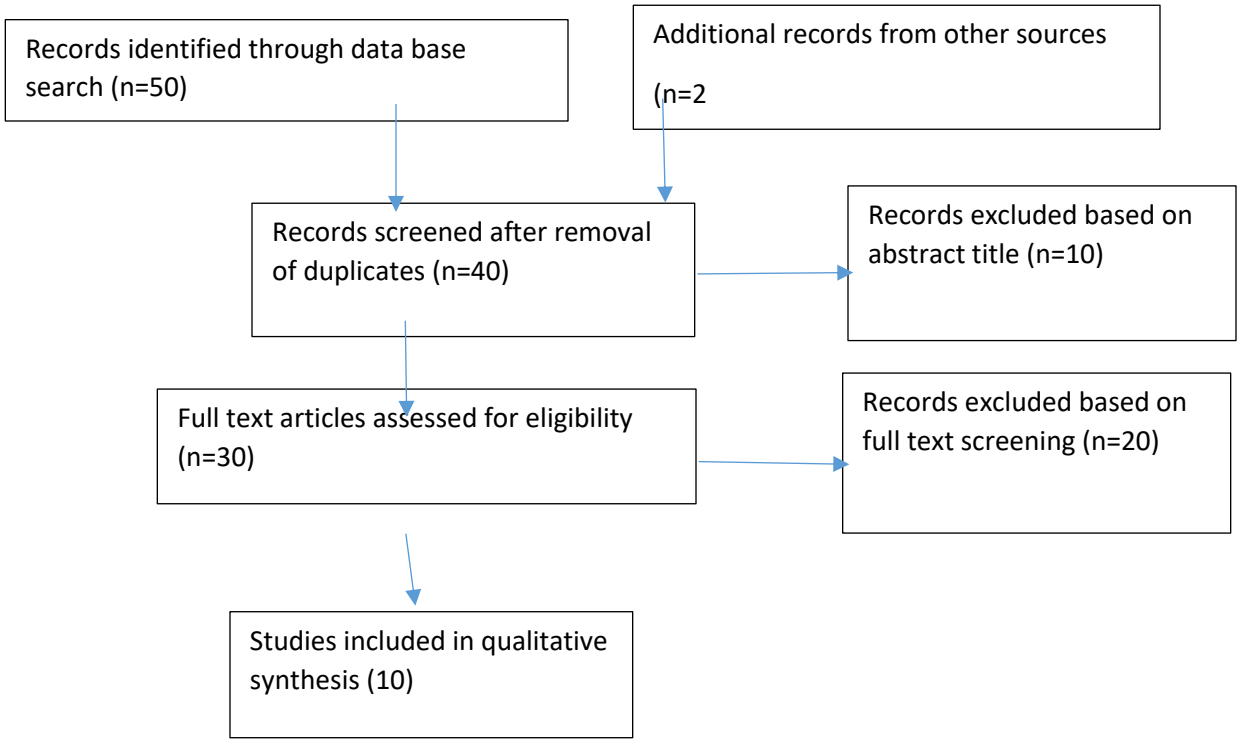
**Results Screening and Selection of Papers**

All the journals were empirical studies. Of the 10 paper studies conducted five were journal review papers, two used a cross-sectional survey, and the other two used both qualitative and quantitative methods. Among the selected studies, five analyzed secondary data from available health social media surveys, while the rest were results from primary studies.

In regards to publication, 6 papers were published in public health journals, 2 in multi-disciplinary archives and 2 in journals in communication. In relation to social media platforms used in passing health initiatives or communicating health, 4 examined general social media without specification. Two of the studies featured Twitter while the other 4 featured both Twitter and Facebook.

The 10 studies identified the impact of social media in the promotion of health initiatives and categorized them as positive and negative impacts.

**PRISMA FLOW CHART ILLUSTRATING SELECTION OF STUDIES**




## 4.0 Findings and Discussions

### Challenges in maintaining credibility because of disinformation and misinformation

Disinformation is false or misleading information that is spread maliciously with the intent to manipulate or deceive the audience while misinformation refers to the spread of inaccurate information unintentionally without the intent of deceiving.

COVID -19 pandemic, emerged as a global crisis which needed immediate interventions, however, lack of clarity on its origin and its causes in the initial days stemmed up panic. This gave room to social media fillers to fill the vacuum. There was an abundance of either disinformation or misinformation which posed challenges in knowledge legitimacy leading to competing truths (Hulmer et al.,2020). Further, the study found out that there was algorithmic bias in information sharing, whereby health misinformation was more frequently shared that accurate information.

One study found out that social media was most likely to spread rumors or inaccurate information on health initiatives, disease outbreaks to instill fear or due to ignorance. According to Desai et al. (2022), the consequences of misinformation propagated through social media during the COVID-19 pandemic, led to hospitalizations because of self-medication with inappropriate and potentially toxic regimens, like ivermectin which is meant for livestock, and other global panic-buying due to rumors of a complete shutdown. To address this and combat misinformation, strategies such as modification of machine learning algorithms to taking into account factors like source and accuracy of information, rather than promoting posts based on user engagement proved effective (Desai et al. 2022).

Desai (2022) found that Health institutions used social media through their official accounts to share timely updates, debunk myths and provide credible information to the public. The accounts like the World Health Organization's page and website also posted information on the outbreak of infectious diseases like Swine Flu and COVID-19. Equally, three of the studies indicated that people who sought health information on social media did not check to determine whether the information was accurate or not. This led to the inappropriate spread of health messages to various demographics that could potentially increase fear and propaganda.

**Influence Health Behavior Change**

Behavior change is not an event but a process. During the COVID-19 pandemic, people were continually exposed to social media messages, especially those linked to hand washing processes, social distancing, and avoidance of large social gatherings. These messages led people to act in a particular way over time that is behavior change (Madziva et al., 2022). From the findings of the study, it was concluded that social media has a big impact on behavior change as far as health initiatives are concerned. In addition, the research conducted revealed that specific interventions and approaches used gave varied outcomes because of the target population, functionality and usability of the type of social media used.

Three studies found that health messages on social media influenced individuals to change their behaviors as per the information that was disseminated, and they further acknowledged that they use social media to get health information and such campaigns like the stoppage of tobacco smoking led them to change their behaviors.

From the studies patients reported to have experienced empowerment in their decision making about their health via on line learning; they equally agreed to have a boost of confidence to ask questions of their care providers and other information that enabled them to manage their health conditions (Fleisher et al., 2002). This did not,

however, translate to them feeling empowered during their clinical encounters, as they feared challenging the authority of their care providers.

**Disease Monitoring and Surveillance**

Two studies found that the growth of social media has led to an emergence of its new role: disease monitoring and surveillance**.** Stellefson (2020) states that social media is a new tool that health institutions are using to promote their health initiatives, monitor new and reemerging health outbreaks and which in turn has led to updated roles for health education specialists. Public health specialists leveraged social media analytic tools, identified potential outbreaks and tracked perceptions of health initiatives thereby gathering insights into emerging trends.

Additionally, two other studies, one by Kanchan and Gaidhane (2022) on the role of social media and its impact in public health and Ghahramani et al. (2022) on the potential of social media beyond health promotion, found that social media platforms have been used by public health specialists to raise awareness about policy issues related to health, advocate for legislative changes and mobilize support for public health initiatives. One study by Xu et al. (2016) on leveraging social media to promote public health knowledge**,** found out how social media has been analyzed to predict onset of future illnesses to individual users. Twitter is one of the social media that was analyzed, the use of language in an individual's post like stress, anxiety, were used to predict an occurrence of a mental illness to such an individual and be able to different it with other mental illnesses. The use of emojis, were used to identify illnesses like Asthma. This gave real time information that advised on policy change to curb any re-emerging health crises.

**Ethical Implications**

The study highlighted several ethical concerns regarding the use of social media for health promotion. This is the most difficult issue in Social Media research. One study by Farsi (2021), emphasized that privacy concerns must be addressed because, tracking, targeting and profiling of users are common in the digital world. Bender et al. (2017) proposed privacy-enhanced social media recruitment guidelines including proactive measures to protect privacy and declaration of potential risks. Vulnerable groups such as children and teenagers, homosexuals in regions where homosexuality is illegal, and individuals with mental illnesses require extra emphasis on respect, confidentiality, and caution in obtaining consent. One other study found that, tracking, targeting and profiling of users are common in the digital world.

In spite of social media offering a means to disseminate health information, one study by Desai et al. (2022) on disinformation and misinformation, states that physicians must refrain from offering diagnoses or treatment plans to patients who are not in their direct line care. The study further recommended that healthcare professionals refrain from providing patient-specific advice. Many physicians currently note in their profiles that their messages (retweets or comments) are not to be construed as medical advice or endorsement.

## 5.0 Conclusion and Recommendations

The results of this study demonstrate that social media platforms have become powerful tools for promoting public health initiatives, particularly during crises like the COVID-19 pandemic. The high reach and engagement rates observed across platforms indicate that social media can effectively disseminate health information to large audiences. The significant impact on health behaviours, especially during the pandemic, suggests that social media can be a catalyst for positive health-related actions.

One of the key findings of the review is the significant impact of social media on health promotion and behavior change (Cheng & Wang, 2021). Studies included in the review highlighted the effectiveness of social media in reaching and engaging diverse populations, disseminating health information, and promoting healthy behaviors. For instance, social media platforms like Twitter, Facebook, and YouTube have been used to raise awareness about various health issues, facilitate peer support networks and encourage positive health behaviors.

Moreover, the review identified the potential of social media for disease monitoring and surveillance. By analyzing the user generated content on platforms like Twitter, researchers have been able to track disease outbreaks in real time, monitor public sentiments towards health interventions, and identify emerging health trends. This real time data can inform public health decision making and help authorities respond more effectively to health emergencies (Aiello et al., 2021).

Despite the numerous benefits of using social media for health communication, the review also highlighted several challenges associated with its use. These include issues in relation to the quality and reliability of health information shared on social media platforms, the potential for misinformation and the spread of rumors, and concerns about data privacy and security.

However, this review lacks an in-depth analysis of the challenges associated with the use of social media for health communication. While the review acknowledged the quality and reliability of health information shared

on social media, the discussion on strategies to address misinformation, privacy concerns and digital divide was relatively brief and did not give recommendations (Afful-Dadzie et al., 2023) A detailed exploration of the challenges could provide a comprehensive understanding of the complexities involved.

Moreover, by understanding the impacts, challenges and opportunities associated with social media use in health communication, all stakeholders in the sector can develop effective strategies to leverage these platforms for improving population health outcomes. Further research and collaboration between stakeholders are essential to maximize the benefits of social media while mitigating potential risks and challenges.

**Recommendations for Practice**

The following recommendations can be considered by stakeholders in the public health sector and health communication based on the systematic review;

Implement quality assurance mechanisms to ensure the quality and reliability of health information that is shared on various social media platforms. This, for instance, can encompass the development of guidelines for creating and disseminating accurate health messages, training healthcare professionals on the effective health communication strategies on social media, and monitoring the accuracy of health information which is shared online.

Prioritize privacy and confidentiality when using social media for health communication. Clear policies and procedures should be established to protect user data, obtaining informed consent for sharing health information and strict compliance with relevant data protection regulations.

Equity and access challenges that bring a digital divide to be addressed to ensure equitable access to health information for all populations. The needs of the marginalized communities, individuals with limited digital literacy, and those with restricted access to technology when designing health communication strategies on social media.

Health institutions, professionals and stakeholders in the health sector should develop strategies that will be geared towards combating misinformation and disinformation concerning health issues circulating on social media. These can involve, collaborating with fact checking institutions, promoting credible information sources and sensitizing the public on the critical evaluation of health-related content shared online.

**Suggestion for Further Studies**

For further studies, researchers can explore the following areas to advance knowledge in the field of social media and public health communication.

Conduct long-term impact assessment; the researchers should investigate the long term effects of social media interventions and their impacts on health behavior change. They should also follow up with participants over an extended period of time to evaluate the sustained impact of social media campaigns on behavior modification, disease prevention and health promotion.

Researchers should also look for monitoring mechanisms to enhance the reliability and quality of health messages shared on social media. They should also develop tools that will conduct real time monitoring of health-related content, sentiment analysis and trend identification to improve the timeliness and accuracy of social media health responses.

Future studies should also conduct cross cultural studies to examine how social media is used in health communication for different cultural context. The studies can also explore the role of cultural values, norms and beliefs in shaping health messages on social media and tailor communication strategies to different populations.

Further studies should conduct effectiveness evaluation through randomized trials to assess the effectiveness of different social media platforms for health communication. The studies should also compare impacts of different communication strategies, their content formats, and the engagement techniques especially on health outcomes so as to identify best practices that can leverage social media for public health initiatives.

Although social media is a double-edged sword in the promotion of public health campaigns, studies have found out challenges and limitations that are associated with its execution that must be addressed to enhance efficiency like, managing misinformation, and ensuring compliance with user privacy protections

While it is relatively straightforward to view social media use as a universal communication channel, especially for to those who are already utilize use social media, the risk of using social media lies in the reduction of health information access to the population that is not technologically enabled. Social media therefore likely to be an ineffective option for population subgroups that are disadvantaged including the elderly; the physically and cognitively disabled; and those with low text, technical, and eHealth literacy (Stellefson et al., 2020)

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