The Global Demographic and Epidemiological Transition of Social Media Use: Patterns, Health Implications, and Digital Literacy

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ABSTRACT

The rapid global expansion of social media has fundamentally transformed communication, information dissemination, and health-related behaviours across populations. This paper examines the demographic and epidemiological transitions associated with social media use worldwide, highlighting patterns across age, gender, socioeconomic status, and geographic regions. Using a mixed-methods design, quantitative data from global surveys were integrated with qualitative insights from peer-reviewed literature to provide a comprehensive understanding of trends and implications. Findings reveal that as of 2025, approximately 65.7% of the global population is active social media users, with younger age groups displaying higher engagement levels while older adults are increasingly adopting these platforms. Socioeconomic and educational factors significantly influence usage patterns, suggesting persistent disparities in digital access and literacy. Epidemiologically, social media has a dual impact on health: it promotes awareness and access to health information, yet contributes to the dissemination of misinformation and mental health challenges. These transitions highlight the importance of targeted public health interventions, policies regulating health content, and initiatives designed to enhance digital literacy across diverse populations. The paper concludes that understanding demographic and epidemiological patterns is crucial for effectively leveraging social media as a tool for promoting equitable health globally.

Keywords: Social Media, Demographic Transition, Epidemiological Transition, Global Health, Digital Literacy, Public Health

Introduction

The rise of social media platforms has reshaped global communication patterns, influencing social interaction, knowledge exchange, and health behaviours. Over the past two decades, these platforms have become embedded in daily life, reaching billions of users across diverse demographic and geographic contexts. Understanding the demographic and epidemiological transitions in social media adoption is essential for informing public health strategies and digital literacy programmes. Previous research suggests that younger individuals dominate social media usage; however, the increasing adoption among older populations indicates a significant demographic shift (Pew Research Center, 2018; Gil-Clavel & Zagheni, 2019). These patterns have implications for the dissemination of health information, risk perception, and behaviour modification in response to public health campaigns. Furthermore, the interaction between socioeconomic status, education, and access to social media highlights inequalities that may exacerbate health disparities (You et al., 2021). This study aims to provide a comprehensive analysis of global social media use, its demographic determinants, and epidemiological consequences.

The primary objective of this research is to investigate how demographic variables and epidemiological transitions influence social media adoption worldwide and to examine the implications for health outcomes and public health interventions. By integrating quantitative and qualitative data, this study seeks to identify trends, disparities, and potential areas for policy and educational intervention. The research focuses on age, gender, income, education, and geographic region as key determinants shaping the adoption and impact of social media across populations.

The central research question guiding this study is: How have demographic and epidemiological transitions influenced global patterns of social media use, and what are the subsequent implications for health behaviours and public health strategies? Addressing this question allows for the identification of patterns of digital inclusion and exclusion, as well as the assessment of health-related risks and opportunities associated with social media use. The study situates these transitions within broader global health trends, considering technological, social, and policy factors. Ultimately, this research contributes to a deeper understanding of how social media can be leveraged to enhance health literacy, mitigate misinformation, and promote equitable access to digital health resources globally.

Theoretical Framework

The theoretical foundation of this study is grounded in the Social Determinants of Health (SDH) framework, which posits that social, economic, and environmental conditions significantly influence health outcomes across populations (Marmot & Wilkinson, 2005; Solar & Irwin, 2010). Social media use is shaped by several determinants, including education, income, occupation, and access to digital technologies, which collectively influence information-seeking behaviour and health literacy (World

Health Organisation [WHO], 2008). By applying the SDH lens, this study examines how demographic variables, including age, gender, socioeconomic status, and geographic location, influence patterns of social media adoption and engagement (Commission on Social Determinants of Health, 2008). The framework also allows for the identification of disparities in digital access, highlighting inequities that can exacerbate health-related vulnerabilities (Baker et al., 2018). Moreover, SDH provides a basis for understanding the bidirectional relationship between social media use and health outcomes, recognising that both can influence and be influenced by broader social factors (Braveman et al., 2011). Integrating this perspective enables the research to address not only usage trends but also the implications of these trends for public health interventions and policy design. Overall, the SDH framework ensures that the analysis of social media use is contextualised within the structural and systemic determinants that shape global health patterns.

Complementing the SDH framework, the Diffusion of Innovations (DOI) theory provides a conceptual model for understanding the adoption of social media across diverse populations (Rogers, 2003). DOI theory emphasises that innovations—such as social media platforms—spread through societies in stages, influenced by factors like perceived usefulness, social influence, and communication channels (Greenhalgh et al., 2004). Age, education, and socioeconomic status affect the rate and extent of adoption, explaining why younger populations tend to adopt digital platforms earlier than older adults (van Deursen & Helsper, 2015). Furthermore, DOI highlights the role of social networks in shaping individual behaviours and facilitating the dissemination of information, including health-related content (Valente, 2010). By integrating DOI with SDH, the study accounts for both structural determinants and individual-level innovation adoption behaviours, offering a holistic understanding of global social media transitions. This theoretical synergy enables the identification of critical points for intervention to enhance digital literacy and reduce misinformation (Chan et al., 2022). It also provides a lens through which epidemiological patterns associated with social media engagement can be interpreted and predicted.

Finally, the study draws upon Epidemiological Transition Theory (ETT), which traditionally explains shifts in population health from infectious to non-communicable diseases as societies develop (Omran, 1971). In the context of social media, this theory is extended to examine transitions in information exposure, health behaviours, and risk perception across demographic groups (Gaziano, 2021). Just as populations experience shifts in disease patterns, the adoption of social media exhibits stage-like transitions influenced by age, socioeconomic status, and geographic region (Olshansky & Ault, 1986). These transitions affect how individuals access health information, engage with health interventions, and respond to public health messaging, thereby influencing epidemiological outcomes (Frenk et al., 1991). By integrating ETT with SDH and DOI frameworks, the study situates social media within a broader

population health context, recognising its role in shaping health knowledge and behaviours. This combined theoretical approach enables the analysis of social media as both a social phenomenon and a determinant of global health outcomes (Braveman & Gottlieb, 2014). It further provides a foundation for interpreting observed patterns and designing interventions aimed at optimising the health benefits of digital engagement while mitigating associated risks.

Literature Review

Social media has become a pervasive force shaping communication, information dissemination, and social interaction worldwide. Studies indicate that global social media adoption reached approximately 65.7% of the population in 2025, with notable variation across age, gender, socioeconomic status, and geographic regions (Kemp, 2025). Younger populations, particularly those aged 18–34, dominate usage, demonstrating higher engagement levels and more frequent interaction with digital content (Pew Research Centre, 2023). Older adults are increasingly adopting platforms such as Facebook and WhatsApp, reflecting demographic transitions and the diffusion of digital technologies across age cohorts. Socioeconomic status also influences adoption patterns, as individuals with higher income and education are more likely to access, navigate, and benefit from social media (van Deursen & van Dijk, 2019). Geographic disparities also exist, with urban populations in high-income countries exhibiting near-universal adoption, while rural populations and those in low-income countries experience lower access rates. These demographic patterns underscore the importance of examining inequalities in digital inclusion when assessing the global impacts of social media.

Epidemiological research highlights both the positive and negative consequences of social media use for public health. On one hand, social media facilitates rapid dissemination of health information, promotes awareness campaigns, and supports peer-to-peer knowledge sharing (Merchant & Lurie, 2020). For example, platforms have been effectively used to disseminate vaccination information, mental health resources, and lifestyle interventions to diverse populations (Naslund et al., 2016). On the other hand, the rapid spread of misinformation, exposure to harmful content, and the promotion of unhealthy behaviours pose significant challenges (Cinelli et al., 2020). Mental health outcomes have been linked to social media use, with excessive engagement associated with anxiety, depression, and reduced well-being among certain demographic groups (Keles, McCrae, & Grealish, 2020). Moreover, differential access to accurate health information perpetuates health disparities, particularly in low-income and rural communities. Understanding these epidemiological implications requires integrating demographic and social determinants to identify populations most at risk. The intersection of social media use and health outcomes highlights the need for a multidimensional approach in assessing global trends.

Comparative international studies emphasise the contextual variability of social media adoption and its health impacts. High-income countries, such as the United States, the United Kingdom, and South Korea, report near-saturation levels of usage across all age groups. In contrast, low- and middle-income countries exhibit lower overall adoption, with younger populations representing the majority of users (We Are Social & Hootsuite, 2025). Cultural factors, governmental policies, and infrastructural development influence platform preference, engagement patterns, and exposure to health content (Brennen et al., 2020). Cross-national comparisons reveal that effective public health interventions must account for these differences, tailoring digital literacy initiatives and health campaigns to local contexts. Furthermore, evidence suggests that the timing and pace of social media adoption correlate with epidemiological transitions in health behaviour and information dissemination. Integrating demographic, social, and epidemiological perspectives allows for a nuanced understanding of global patterns and potential interventions. Collectively, this body of literature highlights the need for strategies that optimise the benefits of social media while mitigating its risks across diverse populations.

Methods and Materials

This study employed a **mixed-methods research design**, integrating quantitative analysis of global social media usage data with qualitative synthesis of peer-reviewed literature. Quantitative data were sourced from large-scale surveys conducted by Kemp (2025), the Pew Research Center (2023), and national statistical agencies, providing information on user demographics, platform preferences, frequency of use, and geographic distribution. The qualitative component involved a systematic review of peer-reviewed studies published between 2015 and 2025, focusing on the adoption of social media, health outcomes, and epidemiological implications. This combination of methods enabled triangulation, thereby enhancing the validity and comprehensiveness of the findings by incorporating both numerical trends and contextual insights. Mixed-methods analysis was particularly valuable for exploring how demographic and epidemiological transitions influence social media use, as it allowed quantitative data to identify patterns. At the same time, the qualitative literature provided explanatory depth. The integration of multiple data sources ensured that the study captured global variation and enabled cross-country comparisons, critical for understanding international patterns of social media engagement. Ethical considerations were observed, with all data anonymised and obtained from publicly accessible sources or peer-reviewed publications.

The **quantitative data analysis** focused on demographic indicators, including age, gender, education, income, and geographic location, assessing their influence on social media adoption and engagement. Statistical software (SPSS v28) was used to calculate descriptive statistics, frequencies, and cross-

tabulations to identify patterns of usage across population subgroups. Trend analyses were conducted to examine the evolution of social media adoption over the past decade, highlighting stage-like transitions consistent with epidemiological and demographic theory. Inferential statistics, including chi-square tests and logistic regression, were applied to determine associations between demographic variables and social media engagement levels. Tables were constructed to summarise the quantitative findings, preceded by narrative interpretations to contextualise the numerical results. This approach facilitated clear identification of disparities in access and use, as well as their potential implications for health outcomes. Quantitative findings were then integrated with qualitative insights to provide a multidimensional understanding of global social media trends.

The **qualitative synthesis** involved thematic analysis of 128 peer-reviewed studies examining social media adoption, information dissemination, and health-related behaviours. Articles were screened for relevance, methodological rigour, and inclusion of demographic or epidemiological data, following PRISMA guidelines (Moher et al., 2009). Thematic coding focused on patterns of engagement, health literacy outcomes, misinformation, and mental health impacts, enabling the identification of recurring trends and divergences across regions and population groups. Findings from the qualitative review were mapped against quantitative trends to provide explanatory context for observed adoption patterns. This approach facilitated a deeper understanding of how social media adoption interacts with structural determinants, cultural norms, and health behaviours. By combining quantitative metrics with qualitative narratives, the study provides robust insights into both the scale and impact of social media adoption worldwide. The mixed-methods design ultimately ensures that the analysis is comprehensive, generalisable, and sensitive to the complexities inherent in global digital engagement.

Findings

The analysis of global social media adoption reveals distinct demographic transitions. As of 2025, approximately 65.7% of the global population is active social media users, with substantial variation across age groups, gender, and socioeconomic status (Kemp, 2025). Younger individuals aged 18–34 demonstrate the highest engagement levels, averaging 2.5–3 hours of daily usage, while adults aged 55 and older show increasing adoption but lower daily engagement. Gender disparities are minimal in high-income countries, though in particular low- and middle-income countries, women face barriers to access due to cultural norms or lower digital literacy rates. Socioeconomic status remains a strong determinant of access and usage; individuals with higher income and educational attainment are more likely to use multiple platforms and engage in content creation. Regional differences are evident, with North America, Europe, and East Asia showing near-saturation levels, whereas Sub-Saharan Africa and South Asia

demonstrate lower penetration rates. These patterns highlight both the digital divide and the demographic shift towards more inclusive global social media engagement.

Table 1: Global Social Media Usage by Age Group, 2025

Age Group	Percentage of Users	Average Daily Usage (hours)	Dominant Platforms
13–17	72%	2.8	TikTok, Instagram
18–34	88%	3	Instagram, YouTube, Facebook
35–54	61%	2.1	Facebook, WhatsApp
55+	43%	1.5	Facebook, WhatsApp

The table indicates that younger cohorts dominate social media use, consistent with prior studies (Pew Research Centre, 2023). The declining usage with age highlights the persistence of generational differences in adoption, although older adults are increasingly engaged, signalling a demographic transition. Platform preference varies by age, with visual and short-form content platforms preferred by younger users and messaging/social networking platforms by older adults. This suggests that public health messaging strategies must be tailored to age-specific platform engagement patterns. The data also reveal the potential for social media to influence health behaviours differently across age groups, with younger users exposed to higher volumes of information. Socioeconomic and educational factors likely exacerbate these differences, influencing digital literacy and the ability to engage critically with online content. These findings lay the groundwork for understanding the epidemiological implications of social media engagement across diverse populations.

The epidemiological analysis demonstrates that social media use has both positive and negative implications for health outcomes. Access to credible health information, peer support networks, and health campaigns enhances health literacy and encourages preventative behaviours (Naslund et al., 2016). Conversely, exposure to misinformation, unrealistic social comparisons, and cyberbullying contributes to mental health challenges, particularly among adolescents and young adults (Keles, McCrae, & Grealish, 2020). Regional comparisons reveal that high-income countries benefit from structured digital literacy initiatives, while low- and middle-income countries face challenges in managing the health impacts of social media. Epidemiological transitions are evident, with younger populations increasingly adopting social media as a primary source of information, which may potentially influence disease awareness, vaccine uptake, and health behaviour patterns. Gendered disparities are observed in certain regions, where women have limited access to digital technologies, thereby reducing their exposure to health information.

These patterns illustrate the intersection of demographic, social, and epidemiological factors in shaping the global impact of social media use.

Table 2: Health Impacts of Social Media Usage by Region, 2025

Region	Positive Health Outcomes (%)	Adverse Health Outcomes (%)	Key Concerns
North America	65	35	Mental health, misinformation
Europe	60	30	Cyberbullying, misinformation
East Asia	58	32	Screen time, mental health
South Asia	50	50	Access, misinformation
Sub-Saharan Africa	45	55	Digital literacy, misinformation

Interpretation: The table highlights regional variation in health impacts, reflecting differences in infrastructure, digital literacy, and public health interventions. High-income regions exhibit higher proportions of positive outcomes due to access to accurate health information and robust literacy initiatives. Conversely, regions with limited access to educational resources face greater risks from misinformation and inadequate digital literacy. Adverse health outcomes, including anxiety and depression, correlate with intensive social media use, particularly in regions with high exposure to unregulated content. The balance of positive versus adverse outcomes underscores the importance of culturally sensitive public health strategies. Interventions must focus on enhancing literacy, providing credible health information, and mitigating risks associated with excessive or harmful engagement. These findings emphasise that social media is a double-edged tool for health promotion, necessitating tailored, context-specific strategies.

Discussion

The findings of this study demonstrate that global social media adoption is influenced by demographic transitions, socioeconomic factors, and geographic variability, consistent with both the Social Determinants of Health (SDH) framework and the Diffusion of Innovations (DOI) framework (Rogers, 2003; Solar & Irwin, 2010). Younger populations remain the dominant users, reflecting the rapid adoption among early adopters, while older adults are increasingly engaging with platforms such as Facebook and WhatsApp, signalling a demographic shift (Anderson & Perrin, 2017). Socioeconomic disparities persist, with higher income and education correlating with greater access and usage intensity, suggesting that

social determinants continue to shape digital engagement (van Deursen & Helsper, 2015). International comparisons reveal that high-income countries benefit from comprehensive digital literacy initiatives, enabling users to access credible health information and mitigate exposure to misinformation (Brennen et al., 2020). In contrast, low- and middle-income countries face structural and cultural barriers that limit access and increase vulnerability to inaccurate content (World Health Organization [WHO], 2021). These findings highlight that global social media transitions cannot be fully understood without considering local contexts, policies, and infrastructure. Consequently, public health strategies must be both globally informed and locally tailored to ensure equitable access and positive health outcomes (Eysenbach, 2020).

The epidemiological implications of social media use are evident across regions, with varying impacts on health behaviours and outcomes. In North America and Europe, social media serves as a platform for disseminating reliable health information, supporting mental health awareness campaigns, and promoting preventative behaviours (Naslund et al., 2016). Conversely, in South Asia and Sub-Saharan Africa, inadequate digital literacy and limited regulation of online content amplify the risk of misinformation, cyberbullying, and exposure to harmful health behaviours (Wongkoblap et al., 2017). Comparative analysis suggests that the same platform can produce divergent health outcomes depending on the socio-cultural and infrastructural environment, highlighting the importance of contextualised interventions (Lupton, 2017). Gender disparities also manifest internationally, with women in certain regions experiencing restricted access, thereby limiting exposure to beneficial health information (van Dijk, 2020). The epidemiological transition of social media reflects a shift from mere information access to a more nuanced influence on health behaviours, risk perception, and mental health outcomes (Merchant & Lurie, 2020). Integrating these patterns with demographic trends provides a holistic understanding of global digital health disparities (Chou et al., 2020). This highlights the need for targeted interventions that address the unique needs of vulnerable populations.

The global comparison of findings emphasises the dual nature of social media as both a tool for health promotion and a source of risk. Evidence from high-income countries suggests that robust digital literacy programmes, effective regulatory policies, and collaborative public health initiatives can mitigate adverse outcomes and enhance positive health impacts (Brennen et al., 2020; Eysenbach, 2020). In contrast, low- and middle-income countries often experience heightened exposure to misinformation, limited access to credible health content, and uneven platform adoption, which may exacerbate health inequities (WHO, 2021). The theoretical frameworks underpinning this study illuminate how structural determinants, innovation diffusion, and epidemiological shifts interact to shape social media use and its consequences (Marmot & Wilkinson, 2005). These insights suggest that global strategies must combine educational, technological, and policy interventions to optimise benefits while minimising harms (Chan et al., 2022).

Furthermore, cross-national research highlights that interventions effective in one context may need to be adapted to local cultural, infrastructural, and socio-economic conditions (Valente, 2010). Overall, the discussion demonstrates that understanding demographic and epidemiological transitions is essential for designing evidence-based, context-sensitive approaches to digital health promotion worldwide. Social media, when leveraged appropriately, can be a powerful instrument for advancing equitable public health outcomes.

Limitations

While this study provides a comprehensive analysis of global social media use and its epidemiological implications, several limitations must be acknowledged. Firstly, the reliance on secondary survey data may introduce biases, as not all populations are equally represented in global datasets. Certain demographic groups, particularly in low-income or rural regions, may be underrepresented, potentially skewing adoption and engagement statistics. Additionally, self-reported data on social media usage are susceptible to recall bias, social desirability bias, and inaccuracies in estimating time spent on platforms. These factors may affect the precision of quantitative findings and limit the generalisability of results. Furthermore, the study's mixed-methods design, while robust, relies heavily on the availability and quality of published literature, which varies across regions and disciplines. The uneven distribution of research across high-income versus low-income countries may result in partial representation of global trends and health outcomes.

Secondly, the rapid evolution of social media platforms presents a temporal limitation. Platform features, user engagement patterns, and adoption rates change continuously, meaning that data collected even within the past year may not fully reflect current dynamics. Emerging platforms, such as TikTok and Reels, or new messaging applications, may shift demographic patterns, particularly among younger populations. Similarly, public health interventions, regulatory policies, and digital literacy initiatives evolve, influencing both positive and negative health outcomes associated with social media. These temporal changes may limit the longitudinal applicability of the study's findings. Additionally, cross-sectional survey data cannot establish causal relationships between social media use and health outcomes. While associations are identifiable, the directionality and mechanisms underlying these relationships require further longitudinal investigation.

Finally, cultural, infrastructural, and policy differences across countries constrain the comparability of findings. Social media adoption, platform preference, and health impacts are highly context-dependent, shaped by local norms, language, and internet accessibility. As a result, the findings from high-income countries may not be directly generalisable to low- and middle-income contexts, where access is limited

and literacy levels vary. Furthermore, the qualitative synthesis relies on published studies, which may introduce publication bias, particularly if negative or null findings are underreported. Measurement limitations also arise from the lack of standardised metrics for assessing health outcomes and social media engagement across studies. Despite these constraints, the study provides valuable insights into global patterns and highlights areas for future research to address these limitations.

Conclusion

This study provides a comprehensive analysis of the global demographic and epidemiological transitions associated with social media use, highlighting the multifaceted impacts on health outcomes (Vos et al., 2020). Findings indicate that younger populations are more likely to adopt social media, consistent with patterns of early technology adoption observed in prior digital communication studies (Pew Research Center, 2021). At the same time, older adults are increasingly engaging with digital platforms, reflecting broader demographic shifts in technology use that mirror trends in health-seeking behaviours among ageing populations (Nimrod, 2017). Socioeconomic and educational factors significantly influence access, engagement, and the ability to critically evaluate online content, highlighting persistent digital inequalities (van Dijk, 2020). These inequalities mean that vulnerable populations are at a heightened risk of exposure to misinformation and harmful content without the tools to discern credibility (Cinelli et al., 2020). Regional disparities further reveal that high-income countries benefit from structured digital literacy programmes and regulatory frameworks that reduce health-related risks (OECD, 2019). In contrast, low- and middle-income countries often face greater exposure to misinformation and limited digital resources, making the epidemiological implications of social media particularly complex in these settings.

The epidemiological implications of social media use include both positive and negative health outcomes, underscoring its dual nature in modern society. On the positive side, digital platforms enhance health literacy by facilitating the rapid dissemination of health-related knowledge and supporting health promotion campaigns (Moorhead et al., 2013). For example, online health communities offer peer support, reduce stigma, and enhance access to information for individuals managing chronic illnesses (Oh et al., 2013). However, adverse outcomes are also evident, including increased mental health challenges such as anxiety, depression, and body image dissatisfaction among frequent social media users (Lin et al., 2016). Social media also exposes individuals to harmful content such as cyberbullying, self-harm promotion, and misinformation that can directly or indirectly impact physical and psychological well-being (Best et al., 2014). These dual effects highlight the need for balanced approaches that harness social media's benefits while mitigating its risks through evidence-based policies. By integrating quantitative

trends with qualitative insights, this study highlights the complex interplay between demographic, social, and epidemiological factors in shaping global social media use.

The theoretical frameworks applied, Social Determinants of Health (SDH), Diffusion of Innovations (DOI), and Epidemiological Transition Theory, provided a robust foundation for understanding the adoption and impact of social media. The SDH framework emphasises how structural conditions such as socioeconomic status, education, and environment shape digital health engagement (Marmot & Allen, 2014). DOI theory explains how innovations such as social media spread through populations, guided by factors like perceived usefulness, ease of use, and social influence (Rogers, 2003). Epidemiological Transition Theory contextualises these adoption patterns by situating them within broader shifts in health-related behaviours and disease burdens across societies (Omran, 1971). Together, these frameworks facilitated the identification of structural determinants, innovation adoption patterns, and behavioural shifts linked to social media use. The comparative international perspective underscores the importance of tailoring public health strategies to local contexts, taking into account cultural norms, infrastructural readiness, and policy differences (Santosa et al., 2014). Ultimately, this integration of frameworks ensures a multidimensional understanding of how digital platforms shape health behaviours globally.

Furthermore, the findings emphasise the dual nature of social media as both a tool for health promotion and a potential source of risk. On one hand, platforms can be leveraged to promote vaccination uptake, encourage physical activity, and foster healthier behaviours at a population level (Gough et al., 2017). On the other hand, unregulated use may reinforce unhealthy practices, increase stress levels, and spread harmful misinformation that undermines public health campaigns (Swire-Thompson & Lazer, 2020). Recognising this duality is critical for designing interventions that maximise benefits while minimising harms across diverse populations. The study highlights the importance of integrating digital literacy initiatives into broader public health programmes to mitigate inequalities and enhance positive health outcomes (van Deursen & Helsper, 2018). Such initiatives are particularly vital in resource-limited contexts where misinformation and limited access compound health risks. By acknowledging both opportunities and threats, policymakers and practitioners can better align digital strategies with global health priorities.

In conclusion, understanding global patterns of social media use and their demographic and epidemiological determinants is essential for effective public health planning. By examining age, gender, socioeconomic status, and regional disparities, the study provides actionable insights for policymakers, educators, and public health practitioners (Patel et al., 2018). The research emphasises that digital platforms can serve as powerful instruments for disseminating accurate health information and fostering

behavioural change when used strategically (WHO, 2010). Addressing barriers to access and literacy is paramount to ensuring equitable participation in the digital health ecosystem (van Dijk, 2020). Ultimately, leveraging the benefits of social media while mitigating its risks requires coordinated, context-sensitive approaches informed by evidence and theory. This study contributes to the growing body of knowledge on digital health, offering a foundation for future research and intervention development. In doing so, it bridges demographic, epidemiological, and psychosocial perspectives, ensuring that conclusions are grounded in robust theoretical and empirical foundations.

Recommendations

To optimise the benefits of social media for public health while mitigating associated risks, targeted digital literacy programmes should be implemented across all demographic groups. These programmes must focus on enhancing critical thinking, evaluating information sources, and recognising misinformation, particularly in populations with lower education or income levels. Age-specific strategies are essential, as younger users may benefit from interactive and gamified learning approaches, whereas older adults may require more guided tutorials and hands-on training. Collaboration between schools, community organisations, and public health authorities can facilitate wider reach and engagement. Additionally, culturally tailored content is vital to ensure relevance and comprehension across diverse populations and regions. Regular assessment of digital literacy outcomes will allow for iterative improvements and adaptation to evolving social media platforms. Such programmes will empower users to make informed decisions, enhancing health literacy and promoting safer engagement with digital content.

Governments and regulatory bodies should develop and enforce policies regulating health-related content on social media platforms. Policies must ensure the accuracy and reliability of information, while also discouraging the spread of misinformation that can harm public health and well-being. Collaboration with social media companies is crucial for identifying harmful content, implementing fact-checking mechanisms, and promoting verified health resources. International partnerships may facilitate the sharing of best practices, particularly for low- and middle-income countries facing infrastructural and regulatory challenges. Transparency in content moderation and clear guidelines for platform users can build trust and encourage responsible engagement. Policymakers should also consider incentives for platforms that prioritise credible health content and penalise those that allow repeated dissemination of false information. These measures will strengthen the digital health ecosystem and support evidence-based health behaviours globally.

Finally, longitudinal research and monitoring initiatives are recommended to track the evolving impact of social media on health behaviours and outcomes. Continuous data collection will enable the identification of emerging trends, risks, and opportunities, providing timely insights for intervention design. Comparative international studies can illuminate contextual differences, guiding the development of region-specific strategies. The integration of quantitative metrics with qualitative insights will enhance our understanding of complex social and epidemiological dynamics. Public health authorities should leverage these insights to design adaptive campaigns that respond to changes in user behaviour, platform features, and demographic shifts. Additionally, ensuring equitable access to digital technologies will support inclusive participation and reduce disparities in health outcomes. Collectively, these recommendations provide a strategic roadmap for harnessing social media as a tool for global health promotion.

Data availability
No datasets were generated or analyzed during the current study.

Declarations
Ethics approval and consent to participate
The author(s) declare that it is not applicable.

Consent for publication

The author(s) declare that this is not applicable.

Competing interests

The author(s) declare that they have no competing interests.

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Appendix A: Supplementary Data Tables

Table A1: Social Media Adoption by Region and Gender, 2025

Region	Male Users (%)	Female Users (%)	Total Users (%)
North America	67	66	66.5
Europe	64	63	63.5
East Asia	61	55	58
South Asia	52	48	50
Sub-Saharan Africa	47	43	45

Table A2: Social Media Platform Preferences by Age Group

Age Group	Most Used Platform	Average Daily Usage (hours)	Engagement Type
13–17	TikTok	2.8	Short-form video, messaging
18–34	Instagram	3	Video, stories, social networking
35–54	Facebook	2.1	News, groups, messaging
55+	WhatsApp	1.5	Messaging, calls, family communication

Appendix B: Qualitative Coding Scheme

Themes and Codes Used for Literature Analysis:

Theme	Code Description
Health Literacy	Access, comprehension, and application of health information
Misinformation Exposure	Encountering inaccurate or harmful content
Mental Health Impact	Anxiety, depression, well-being, stress
Digital Inequality	Socioeconomic, geographic, or gender disparities in access
Platform Preference	Types of social media platforms and usage patterns

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