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Digital Health Literacy and the Influence of Social Media Information Quality on Childbirth Decision-Making among Pregnant Women

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ABSTRACT – This paper investigates the relationship between digital health literacy and the interpretation and utilization of social media information by pregnant women in selecting childbirth methods. Employing a qualitative literature review and thematic synthesis, the analysis shows varying levels of digital health literacy significantly modulate women's abilities to discern credible from unreliable information within rapidly evolving digital contexts. The findings reveal that high-quality, evidence-based content fosters informed decision-making aligned with contemporary medical standards, while exposure to low-quality, anecdotal, or biased narratives can lead to misconceptions, anxieties, and suboptimal childbirth choices. Socioeconomic factors and prior health education influence susceptibility to digital misinformation. The study found the necessity for synergistic efforts across healthcare, education, and regulatory domains to elevate digital health literacy and ensure the availability of accurate content for expectant mothers. Integrating digital health literacy into antenatal care, promoting clinician engagement in online forums, and establishing clear content moderation guidelines are pragmatic responses to the identified challenges. Such systemic interventions are critical to empowering maternal autonomy and protecting maternal and neonatal health in an increasingly digitalized world.

Keywords: digital health literacy, social media, childbirth decision-making, maternal health, information quality, health communication, antenatal education.

A. INTRODUCTION

The escalation of digitalization has altered how health-related information is consumed, especially among pregnant women seeking guidance regarding childbirth methods. Today, virtually all aspects of daily life have been transformed by the rapid technological advancements, and health literacy among expectant mothers is no exception. Pregnant women now experience a substantial transition, as information that once depended almost exclusively on direct medical consultation or printed materials is now supplemented, or sometimes even replaced, by sources shared via digital platforms (Van Hauwaert et al., 2024). This phenomenon is particularly salient in the evolving patterns of decision-making related to pregnancy and delivery options.

A growing body of evidence indicates that the widespread use of social media platforms such as Instagram, WhatsApp, YouTube, and various online forums provides pregnant women unprecedented access to health information, personal testimonies, and community discourse. Through these channels, expectant mothers actively search, share, and interpret new knowledge regarding maternity and childbirth, frequently shaping individualized perceptions on preferred delivery approaches. Social media thereby acts as both conduit and amplifier for emerging narratives on childbirth, facilitating a far broader range of influences than could ever be achieved through traditional interpersonal communication or healthcare standard interactions (Lawrence et al., 2023).

While this accessibility appears to democratize health information, it introduces the challenge of discerning trustworthy data from misguided content. The abundance of narratives, opinions, and anecdotal testimonials often blurs the distinction between popular discourse and evidence-based recommendations. As a result, the capability to critically appraise, synthesize, and apply medical information is emerging as an indispensable skill for pregnant women navigating the digital landscape. In this regard, digital health literacy becomes crucial, delineating the boundary between empowered,

informed decision-making and vulnerability to misinformation or suboptimal healthcare choices.

This scholarly work adopts a qualitative approach, utilizing thematic synthesis to integrate findings from primary literature. Attention is focused on the transformation of health information-seeking behaviors among pregnant women, particularly in relation to childbirth method selection facilitated by social media engagement. By mapping these trends against empirical evidence, the analysis aims to highlight both broad social patterns and concentrated complexities, offering a nuanced understanding of digital health literacy in contemporary maternal care.

Despite its potential to empower, the digital information environment introduces a series of compounding challenges that undermine the effective translation of knowledge into healthy behavioral choices for pregnant women. The main challenge is the variability in quality, credibility, and scientific rigor of information found on social media. Pregnant women are served with accurate medical guidance and unfounded claims, which often compounded by conflicting testimonies from influencers, celebrities, and others (George et al., 2023).

Particular difficulties become apparent when personal anecdotes and emotionally charged narratives circulate widely, sometimes positioning certain childbirth methods—such as vaginal birth—as inherently superior, while others, such as caesarean section, may be mischaracterized or stigmatized. This creates an environment that medical recommendations are easily supplanted by socially endorsed messages, regardless of contextual suitability for the individual (Birati et al., 2022; George et al., 2023). The endorsement of delivery choices by online communities may not adequately reflect evidence-based medical standards, instead fuelling misconceptions that affect decision quality (Sulpat et al., 2025).

A further concern is the limited proficiency in digital health literacy observed among pregnant women. Insufficient ability to assess the validity of digital health information, discern medical nuances, and separate evidence from opinion increases susceptibility to deceptive content, including health hoaxes and misinformation (Meldgaard et al., 2022; Xu et al., 2024). The predominance of one-way, emotive health messaging—often prioritizing inspirational or sensational narratives over educational value—exacerbates the situation (Melwani et al., 2022). Inadequate regulation governing health content on digital platforms further aggravates this problem, leaving pregnant mothers exposed to unchecked and sometimes hazardous information (Khayru & Issalillah, 2022).

In addition, insufficient digital health literacy contributes to overreliance on peer groups and social network discussions over professional consultation. Many pregnant women place greater trust in information received from WhatsApp groups or Instagram than medical professionals, impairing their ability to make properly informed decisions (George et al., 2023; Meldgaard et al., 2022; Melwani et al., 2022; Sulpat et al., 2025). Social media can elevate knowledge about techniques to reduce labor pain, the educational value of these interventions is highly depend on both content quality and the availability of professional accompaniment and guidance (Birati et al., 2022). Left unmediated, such information streams threaten to misguide and endanger individuals, especially those lacking adequate skills in content evaluation.

On international scale, there has been progress on the implementation of digital health literacy for maternal and child care. Integration of digital platforms with formal healthcare services, alongside ethical standards for health information accuracy, is being advanced (George et al., 2023). This highlights that such infrastructure remains underdeveloped in countries like Indonesia, where regulatory and educational systems lag behind technological penetration (Sasmita et al., 2023; Sulpat et al., 2025). As a result, pregnant women remain vulnerable to digital health misinformation.

The relentless development of digital technology necessitates continual observation of how pregnant women access and interpret maternity information. The increasing dominance of social media as a primary information channel means that women are no longer passive recipients but active seekers, interpreters, and disseminators of health content. Digital health literacy is placed at the forefront, representing a pivotal variable underpinning the quality of maternal decision-making.

Observing and analyzing digital health literacy among expectant mothers in relation to childbirth choices is imperative for aligning educational strategies and health interventions with actual user behaviors and needs. Strengthening digital health literacy, matched by robust digital content regulation and ethical medical

communication, would contribute to a safer, more effective information ecology supporting maternal and neonatal health.

This study explores how digital health literacy levels among pregnant women influence their interpretation and utilization of social media information in making decisions on childbirth methods. The discussion will explore how social media content quality influences pregnant women medical decisions. The results enrich theoretical discourse on digital health literacy and contribute practical guidance for educators, policymakers, and clinicians by pinpointing the critical areas needing intervention to safeguard maternal and neonatal health in the digital era.

B. METHOD

This study employed a qualitative literature review focusing on digital health literacy among pregnant women, particularly in relation to their interpretation of social media information when considering childbirth methods. The qualitative literature review allows an in-depth exploration of complex social phenomena by synthesizing evidence from a diverse range of scholarly sources. Thematic synthesis was used to systematically integrate empirical findings, enabling identification of key patterns and constructs relevant to digital health literacy in maternal care. As highlighted by Creswell and Poth (2017), qualitative methodologies are appropriate for exploring human experiences in social contexts and are especially effective in elucidating constructs such as health literacy in the digital age.

Literature was comprehensively searched using databases such as PubMed, Scopus, and Web of Science, employing keywords including "digital health literacy," "pregnancy," "social media," "childbirth decision-making," and "maternal health information." Inclusion criteria included peer-reviewed journal articles, systematic reviews, and established scholarly books, with a preference on pregnant women's use of social media and the impact on their health literacy and medical decision-making. Exclusion criteria involved non-English publications, studies without rigorous qualitative or mixed-methods components, and focusing on populations outside the scope of the study. The synthesis process followed the guidelines by Noblit and Hare (1988) on meta-ethnography and thematic qualitative synthesis, ensuring a transparent, systematic, and replicable process supporting the credibility and validity of findings.

Data from selected studies were extracted and thematically coded in a multi-stage process. Initial coding involved identifying recurring topics such as types of social media used, sources of information, levels of digital health literacy, and reported effects on childbirth decision-making. Axial coding was applied to group related concepts and develop overarching themes, such as information credibility, professional consultation, content quality, and user engagement. The analytical process adhered to Patton (2015) recommendation, emphasizing investigator reflexivity and methodological rigor. Findings were triangulated across sources to minimize bias and ensure that the emergent themes accurately captured the complexities inherent in the subject matter.

C. RESULTS AND DISCUSSION

Interpretation of Social Media Content and Digital Health Literacy among Pregnant Women

Digital health literacy fundamentally shapes how pregnant women interpret, assess, and utilize information accessed through social media in selecting childbirth methods. As digital ecosystems proliferate, expectant mothers are confronted with an extensive array of childbirth narratives, procedural testimonials, and health recommendations, disseminated with varying degrees of credibility. The ability to filter, contextualize, and critically engage with health information is a direct function of one's digital health literacy—a concept that encompasses technical proficiency, critical evaluation skills, and the capacity to apply health knowledge in personal decision-making (Jafree et al., 2021).

Research demonstrates that women with high digital health literacy tend to exercise rigorous discernment regarding sources, prioritizing evidence-based accounts, clinical guidelines, and advice from verified medical professionals (Li et al., 2025; Lupton, 2016). They are less influenced by anecdotal or emotionally charged narratives from social influencers. Instead, their childbirth decisions are based on careful comparison of medical benefits and risks, reflective deliberation on scientific literature, and active consultation with healthcare providers (Ningrum et al., 2024). This evaluative approach leads to more rational childbirth choices, aligning closely with established maternity care protocols and reducing the likelihood of being misled by popularized fads or disinformation.

In contrast, limited digital health literacy exposes pregnant women to some vulnerabilities in digital information environment. Individuals who lack to navigate online medical resources, assessing source credibility or interpret evidence-based recommendations often rely on groupthink within their online peer networks (Aisyah & Issalillah, 2021). The widespread use of unregulated forums and viral content allows misinformation or myths about childbirth. For example, personal stories that idealize "natural" birth or portray caesarean sections negatively can affect women with less developed analytical and verification skills, leading them toward less optimal or even unsafe choices (Li et al., 2025).

Digital health literacy is multifaceted, extending beyond information access to include higher-order skill, such as validation, integration, and contextual understanding. Pregnant women with these competencies use social media strategically—not only as a source of initial ideas but also as a tool to verify medical advice from clinicians (Zingg et al., 2023). This sophisticated information behavior reflects their ability to distinguish factual content from opinion, filter for bias, and link digital data to their own health status, values, and risk profiles (He et al., 2025).

Findings from diverse settings confirm that socioeconomic factors, educational background, and previous exposure to digital health interventions modulate digital health literacy among pregnant women (Ningrum et al., 2024). Women from marginalized groups, adolescents, and those lacking prior health education are disproportionately affected by digital misinformation, highlighting the intersection of digital literacy disparities and broader health inequities (Aliyah et al., 2022). Addressing these challenges requires improving technical digital skills alongside fostering critical inquiry, skepticism toward unverified content, and a robust foundation in maternal health knowledge (Jafree et al., 2021; Li et al., 2025).

Theoretical constructs such as e-Health Literacy, as articulated by Norman and Skinner (2006), provide a rigorous framework for understanding the competencies needed to navigate modern digital health environments. The six literacies identified—traditional, health, information, scientific, media, and computer—demonstrate the integrated nature of skills required by pregnant women to effectively interpret and use digital information in childbirth decision-making. Empirical studies affirm that interventions aimed at improving these literacies, whether through education or digital tools, increase the likelihood of safe, evidence-informed childbirth choices (Jafree et al., 2021; Ningrum et al., 2024).

From a managerial perspective, healthcare systems have a salient mandate to support educational initiatives that safeguard pregnant women against digital misinformation. Evidence points to the critical importance of health professionals actively engaging with digital platforms, correcting erroneous content, and providing clear, accessible information tailored to the distinctive needs and learning styles of expectant mothers (Lupton, 2016; Ningrum et al., 2024). By aligning communication strategies, stakeholders can mitigate inappropriate influence, strengthen informed consent, and improve maternal health outcomes.

Synthesizing the literature, it is clear that digital health literacy is neither static nor uniform across populations. Its development is influenced by context, personal experience, and institutional intervention (Van Kessel et al., 2022). Pregnant women's interpretive abilities reflect a continuous interplay between personal agency and systemic support. Professional guidance, peer education, and interactive digital resources synergistically contribute to digital health literacy growth. Concerted multi-level approaches, such as encompassing family, community, and policy, are required to address both content quality and literacy capability in tandem (Xu et al., 2024). Moreover, the dynamic nature of digital ecosystems necessitates continuous adaptation of educational strategies to keep pace with evolving information landscapes and emerging technologies (Li et al., 2023). Crucially, cross-sectorial collaboration between healthcare providers, technology companies, and educational institutions must be institutionalized to ensure that interventions are sustainable and responsive to real-world needs (Álvarez-Pérez et al., 2022). Finally, the establishment of rigorous monitoring and evaluation frameworks is imperative to assess the effectiveness of literacy programs, refine best practices, and guarantee the long-term enhancement of maternal health outcomes through targeted digital health empowerment.

The extent to which pregnant women use social media as a credible resource for childbirth choices is determined by their digital health literacy. High digital health literacy enhances autonomy, fosters critical engagement, and

optimizes health behaviors. In contrast, inadequate digital health literacy perpetuates compliance with erroneous narratives, exposes women to clinical risk, and widens health disparities. The challenge is to accelerate and democratize literacy acquisition while concurrently ensuring authoritative, accurate, and inclusive content in digital spaces.

As digital landscapes evolve and societal trends shift, digital health literacy must remain a priority in maternal health strategy. The capacity of pregnant women to appraise, synthesize, and apply digital health information not only impacts individual clinical outcomes but shapes the population-level effectiveness of health promotion campaigns. Closing the digital literacy gap is, therefore, an indispensable pillar in advancing maternal and neonatal health equity for the future.

Influence of Social Media Information Quality on Childbirth Decision-Making

The quality of information disseminated via social media platforms is decisive in shaping the medical decision-making processes of pregnant women as they contemplate various childbirth options. Social media, as a repository of diverse content, presents a wide spectrum of information—from scientifically validated data shared by reputable health organizations, to personal experiences and unverified narratives propagated by influencers or peer networks. The differentiation in quality across this continuum exerts substantial influence on the cognition and behavior of expectant mothers navigating childbirth choices.

Empirical studies substantiate that exposure to high-quality, evidence-based information on social media enhances informed medical decision-making. Pregnant women who encounter well-referenced content from recognized experts or reputable institutional accounts are more likely to adopt health behaviors that align with medical guidelines (Li et al., 2025). Transparent presentation of clinical recommendations, statistical risk assessments, and patient-centred care narratives provides a solid foundation for rational evaluation of delivery methods. Such content also fosters interactive engagement, allow users to clarify uncertainties directly with healthcare professionals through digital consultations or moderated forums (He et al., 2025).

Conversely, the prevalence of misinformation and low-quality content has demonstrable adverse consequences. Unverified personal testimonials, dramatized birth stories, and biased portrayals of vaginal delivery or caesarean section contribute to confusion and anxiety among pregnant women (Zingg et al., 2023). When sensationalized or anecdotal accounts become disproportionately viral, they can distort women's perceptions of medical facts, amplify subjective risk beliefs, and undermine trust in professional guidance (Lupton, 2016). Moreover, pregnant women exposed to misleading information may develop misapprehensions regarding the safety, indications, or desirability of specific childbirth options, sometimes leading to avoidance of necessary medical interventions or the pursuit of inappropriately risky choices (Warin, 2021).

Information quality is determined not only by the veracity and completeness of content but also by the manner of its presentation and contextual framing. Social media narratives that appeal to emotion, utilize persuasive imagery, or are algorithmically based on popularity rather than quality, tend to eclipse scientifically accurate but less sensational materials. This environment prioritizes engagement over education and directly threatens evidence-based decision-making when digital literacy is insufficient to counterbalance these dynamics (Li et al., 2025; Lupton, 2016).

The thematic synthesis of recent literature indicates that socio-demographic variables modulate the influence of information quality. Women with greater prior exposure to formal health education, higher socioeconomic status, or established digital health literacy are typically more resistant to low-quality content (Ningrum et al., 2024). In contrast, those with limited prior knowledge or a lack of direct access to healthcare professionals are more susceptible to the sway of trending digital narratives. Peer endorsement and digital echo chambers further complicate the information ecology, reinforcing beliefs through repetitive confirmation irrespective of factual accuracy (Aisyah & Issalillah, 2021; Aliyah et al., 2022). The social media algorithmic design amplifies content based on user interactions and network trends. It often results in the proliferation of unverified or sensational content and resulted in intensify homogeneity of opinion and marginalize dissenting, medically sound advice (Li et al., 2025; Warin, 2021). Thus, shared experiences and testimonies within certain online communities may be perceived as normative standards, even if they deviate significantly from medical best practices.

Despite these challenges, targeted interventions can elevate the quality and accessibility of health information on social media (Issalillah & Khayru, 2023). Partnerships with professional health organizations can help create reliable and engaging content, such as digital campaigns to promote media literacy, and platform-based strategies, such as flagged fact-checks or direct messaging from experts (Ningrum et al., 2024; Zingg et al., 2023). Digital health literacy programs can reduce the chance of pregnant women misled by false claims and encourage them to seek further information from clinicians.

The case for robust content regulation and health communication standards is reflected in emerging policy frameworks. Countries within the European Union and select jurisdictions globally are advancing legal and industry codes that demand transparency, source verification, and accountability for health-related content provided online (Zingg et al., 2023). These measures are vital to protect maternal well-being and promote consistent, evidence-based decision amid overwhelming digital choices (Tampil et al., 2023).

Management of digital health narratives within the maternal context is also a function of health professionals' engagement. Healthcare providers who actively participate in digital platforms, contribute to educational communities, and offer telemedicine consultations create counterweights to the oversaturation of user-generated content. Their presence can increase trust in reliable sources and anchor decision-making processes to scientific rigor rather than social consensus (He et al., 2025; Lupton, 2016).

The interplay between content quality and maternal decision-making also highlights the limitations of individual agency in the digital era. Even digitally literate users can become vulnerable to persuasive misinformation when exposed repeatedly in spaces characterized by social or emotional resonance. Thus, improving information quality is not solely a matter of individual competence but requires systemic changes involving content moderation, algorithmic transparency, and comprehensive health literacy education.

In practice, social media information quality influences childbirth decision-making is determined by an interdependent network of user competencies, content characteristics, platform structures, and real-time access to professional support. Pregnant women empowered by high-quality information are more capable of making choices that harmonize with their values and clinical needs. In contrast, those exposed to low-quality or manipulative digital content without adequate support risk making decisions that go against medical advices, endangering maternal or neonatal outcomes.

These findings underscore the need for systematic strategies to ensure the information quality and support evidence-based maternal decisions in a rapid digital ecosystem. Considering the extensive exposure to unverified sources, collaborative efforts among health institutions, digital information regulatory authorities, and social media platforms become crucial in creating effective filters and validations for maternal health-related content.

Furthermore, enhancing digital literacy through structured educational programs and improved access to credible scientific sources can increase individuals' capacity to select, comprehend, and apply information within the maternal health context. The implementation of automated verification technologies and internal regulations on digital platforms must also be optimized to systematically reduce the spread of misinformation. As part of long-term efforts, the integration of principles of transparency, accountability, and cross-sectoral participation serves as the foundation for creating a healthy and inclusive information ecosystem.

Consequently, multifaceted strategies that are comprehensively designed and oriented on technological adaptation not only reinforce the basis for evidence-based decision-making but also ensure optimal protection for maternal and child health in fast-paced digital era. Three steps in addressing the complex challenges and opportunities in contemporary and future maternal health are strengthening cross-stakeholder synergy, enhancing public capabilities in digital literacy, and reinforcing information governance based on regulatory frameworks.

D. CONCLUSION

Exploring digital health literacy and the quality of social media content highlights the complex interplay between individual competency, information environments, and medical decision-making in pregnant women. Adequate digital health literacy empowers expectant mothers to discern, interpret, and apply online information about childbirth options in ways

that align with scientific evidence and personal health values. Conversely, low digital health literacy and exposure to misleading content on social media can result in misinformed decisions, perpetuate misconceptions, and compromise maternal and neonatal safety. Thus, improving digital health literacy and raising the quality of online information are both essential to support informed, evidence-based choices during pregnancy. The findings highlight the necessity for public health stakeholders, educators, and healthcare professionals to collaboratively foster digital health literacy in maternal populations. Interventions must not only increase access to digital information but also focus on skill-building for critical evaluation and contextual understanding.

Healthcare practitioners should proactively participate in digital platforms by distributing accurate, clear, and timely content that anchors digital discussions in clinical reality. At the policy level, the development of standards, moderation mechanisms, and accountability frameworks for online health information should become a regulatory priority to safeguard vulnerable populations. Ultimately, optimizing maternal health outcomes in a digital era requires a synergetic approach uniting technological, educational, and clinical efforts backed by a robust ethical commitment to truth and accuracy.

It is recommended that priority be given to integrating digital health literacy modules into antenatal care programs and community health education. It is also important for healthcare institutions and professional associations should establish digital outreach teams to counter disinformation and provide fact-based discussions about childbirth. Stakeholders should encourage platforms that promote direct interaction between expectant mothers and healthcare professionals, empowering women to validate and contextualize digital health content. Therefore, the collaboration of multi-stakeholder that bridging the regulators, educators, clinicians, and technology companies, is required to construct digital ecosystems where reliable maternal health information is easily accessed, verified, and implemented.

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