



The Role of Social Media in Shaping Young Mothers' Perceptions of Basic Immunization

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ABSTRACT

Basic immunization is a crucial public health intervention for preventing infectious diseases and reducing infant and child morbidity and mortality. However, immunization coverage among children of young mothers remains suboptimal in some settings, partly due to varying perceptions and beliefs influenced by information sources. This study aimed to analyze the role of social media in shaping young mothers' perceptions of basic immunization. A quantitative cross-sectional survey design was employed involving young mothers with infants and toddlers. Participants were selected using purposive sampling based on predefined inclusion criteria. Data were collected through a structured questionnaire measuring social media exposure (frequency of use, platform type, and content credibility) and perceptions of basic immunization, including knowledge, attitudes, beliefs, and trust. Descriptive statistics and inferential analyses, including correlation and regression tests, were conducted using statistical software to examine relationships between variables. The results showed that most respondents were active daily users of social media, with Instagram and WhatsApp being the most frequently accessed platforms. The majority of young mothers demonstrated positive perceptions of basic immunization; however, a notable proportion exhibited neutral or negative perceptions linked to exposure to unverified or misleading content. Statistical analysis revealed a significant association between social media exposure and immunization perception, particularly the role of content credibility. In conclusion, social media significantly influences young mothers' perceptions of basic immunization. Strengthening digital health literacy and engaging healthcare workers in digital communication are essential to maximize the benefits of social media for public health and reduce the impact of misinformation.

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1. INTRODUCTION

Basic immunization is one of the most effective public health interventions for preventing infectious diseases and reducing infant and child morbidity and mortality. Vaccines protect children from life-threatening illnesses such as measles, polio, diphtheria, pertussis, and tetanus, which continue to contribute to preventable deaths, particularly in low and middle-income countries (Feikin et al., 2016).

Consistent and complete immunization not only safeguards individual children but also strengthens herd immunity, thereby protecting vulnerable populations and supporting overall community health.

Despite its proven effectiveness, immunization coverage remains uneven, especially among children born to young mothers. Several studies have shown that younger mothers tend to have lower immunization compliance due to limited parenting experience, insufficient health knowledge, and competing social and economic pressures. In some regions, immunization dropout rates remain high, indicating that access to services alone is insufficient to ensure full immunization (Baguune et al., 2017). Perception, belief, and trust in vaccines play a critical role in mothers' decisions regarding childhood immunization.

In recent years, social media has emerged as a dominant source of health information, particularly among young mothers. Platforms such as Instagram, Facebook, TikTok, WhatsApp, and YouTube are widely used to seek parenting advice, share experiences, and discuss child health issues (Ifroh & Permana, 2022). These platforms offer rapid access to information and peer support, often filling gaps left by limited contact with healthcare providers. However, social media also presents significant challenges, as health information shared online is not always evidence-based or accurate.

On one hand, social media can function as an effective tool for health education by disseminating credible information from health authorities, medical professionals, and trusted institutions. Educational videos, infographics, and interactive discussions can improve mothers' knowledge and awareness of the benefits and safety of immunization. On the other hand, social media is also a fertile ground for misinformation, vaccine myths, and anti-immunization narratives (Anti-Vaccine, n.d.). Emotionally charged content, personal testimonials, and conspiracy-based messages can easily go viral, contributing to vaccine hesitancy and fear among young mothers who may lack the skills to critically evaluate online information.

Young mothers, commonly defined as women under the age of 30 or those experiencing motherhood for the first time, represent a particularly vulnerable group in the digital health information landscape. This group tends to have high dependence on digital media due to frequent internet use and familiarity with social networking platforms. At the same time, young mothers may have limited health literacy and are often emotionally sensitive during early motherhood, making them more susceptible to persuasive messages (Carolan, 2007). Their reliance on peer opinions, online communities, and influencer recommendations further amplifies the impact of social media on their health-related decision-making.

Social media plays a significant role in shaping health perceptions through repeated exposure, content framing, and social reinforcement. The frequency of exposure to immunization-related content can influence mothers' level of knowledge, attitudes, beliefs, and perceived risks associated with vaccines (Mossey et al., 2020). Positive content shared by healthcare professionals or trusted influencers may strengthen confidence in immunization, whereas negative narratives and fear-based messages may increase doubt and anxiety. Testimonials from other mothers, peer group discussions, and viral content often carry strong emotional appeal, which can outweigh scientific evidence in shaping perception.

Many recent studies have explored the influence of social media on vaccine hesitancy and decision-making among parents. For example, Liebermann et al. (2023) conducted a national online survey in the United States to examine how social media use affected mothers' hesitancy toward the HPV vaccine. Their findings showed that uncertainty about the accuracy of social media messages was significantly associated with higher vaccine hesitancy, whereas influence from a major platform like Facebook was associated with lower hesitancy in multivariable analysis, highlighting complex associations between different social media influences and vaccination attitudes.

A broader analysis of the literature on social media and vaccine knowledge found mixed results regarding the impact of online platforms on vaccine understanding. A systematic review by researchers published in 2023 reported that while increased interaction with accurate social media content could improve HPV vaccine knowledge, mere exposure without credibility did not necessarily translate into deeper understanding. The review also emphasized that engagement with trusted content and

message framing strategies (for example, loss-framed messages or personal narratives) played important roles in shaping positive vaccination attitudes.

Several studies have focused on how social media environments contribute to vaccine-related discussions and decision-making processes. In a netnographic analysis of Facebook interactions, researchers investigated how parental vaccine decision-making was influenced by social media culture, including strong emotional debates, safety concerns, and the spread of misinformation. This qualitative work revealed how negative sentiments and conspiracy-like narratives on social media could adversely shape parents' vaccination choices.

Other research has taken a more data-driven approach to examine online discourse. For instance, the *Journal of Medical Internet Research* (2019) developed a vaccination ontology to map and analyze public sentiment toward childhood vaccination using social media posts. This study identified key factors associated with positive or negative sentiment about vaccines and highlighted the need to monitor antivaccine arguments and rumors that proliferate on social media, which may increase negative public sentiment and reduce vaccination acceptance.

A different methodological perspective was offered by Bilu et al. (2021), who used machine learning to analyze online discussions about childhood vaccinations among Israeli parents. They found that higher social media traffic was associated with greater vaccine hesitancy in some cases, suggesting that the volume and characteristics of online discourse can itself predict hesitancy patterns. The study encouraged health officials to engage directly in social media discussions to counter misinformation and improve public health communication.

Research conducted within Indonesia has also touched on related themes, though not always directly linking social media use to vaccine perception. Magister Nufus et al. (2023) analyzed data from the Indonesian Demographic and Health Survey to investigate the relationship between mothers' access to social media and basic immunization coverage among children. While this study focused on general access rather than online content quality, it emphasized the growing role of digital platforms in maternal health information access in Indonesia.

Although numerous studies have examined vaccine hesitancy and immunization coverage, empirical research that specifically focuses on young mothers as a distinct demographic group remains limited. Furthermore, many existing studies emphasize immunization uptake outcomes without sufficiently exploring the underlying process of perception formation. Contextual factors such as cultural norms, regional media use patterns, and local health communication strategies are also often underrepresented in the literature, particularly in developing country settings.

Based on these considerations, this study seeks to address the existing research gap by analyzing the role of social media in shaping young mothers' perceptions of basic immunization. Specifically, this research aims to examine how different social media platforms and types of content influence young mothers' knowledge, attitudes, beliefs, and risk perceptions regarding childhood immunization. By understanding these dynamics, the findings are expected to contribute to more effective digital health communication strategies and support efforts to improve immunization acceptance among young mothers.

2. RESEARCH METHOD

This study employed a quantitative cross-sectional survey design (Prem et al., 2012). A cross-sectional approach was chosen because it allows researchers to examine the relationship between social media exposure and young mothers' perceptions of basic immunization at a single point in time. This design is appropriate for identifying patterns, associations, and trends in perceptions and behaviors within a defined population without requiring long-term follow-up. Quantitative methods were considered suitable because the study aims to measure levels of exposure, perception, and their statistical relationships in an objective and generalizable manner.

The target population of this study consisted of young mothers with infants or toddlers, defined as mothers aged under 30 years or first-time mothers who have children aged 0–59 months. These mothers were selected because they are at a critical stage of decision-making regarding basic

immunization and are highly active users of social media. The inclusion criteria were young mothers who actively use at least one social media platform and have children eligible for basic immunization (Glanz et al., 2017). Mothers who did not use social media or whose children had chronic conditions affecting immunization schedules were excluded from the study. The sampling technique used was purposive sampling, as participants were selected based on specific characteristics relevant to the research objectives. The sample size was determined using statistical considerations to ensure adequate power for analysis, taking into account feasibility and representativeness of the population.

The independent variable in this study was social media exposure, which included several dimensions such as frequency of social media use, types of platforms accessed (e.g., Instagram, Facebook, TikTok, WhatsApp, YouTube), and perceived credibility of immunization-related content. These dimensions were used to capture both the intensity and quality of social media engagement. The dependent variable was young mothers' perception of basic immunization, which was measured through four main components: knowledge about immunization benefits and schedules, attitudes toward vaccines, beliefs regarding vaccine safety and effectiveness, and trust in immunization programs and health authorities. These components reflect the cognitive and affective aspects of perception that influence health decision-making (Keer et al., 2010).

Data were collected using a structured questionnaire developed based on relevant literature and theoretical frameworks related to health communication and vaccine perception (Gargano et al., 2014). The questionnaire consisted of sections on respondent characteristics, social media usage patterns, and perception of basic immunization. Likert-scale items were used to measure attitudes, beliefs, and trust, while multiple-choice questions assessed knowledge levels. Prior to data collection, the instrument underwent validity and reliability testing. Content validity was assessed through expert review, and reliability was evaluated using internal consistency measures such as Cronbach's alpha. Examples of indicators included frequency of exposure to immunization-related content, perceived accuracy of information, and confidence in vaccine safety.

Data collection was conducted over a specified period using both online and offline methods, depending on participant accessibility (Chetverikov & Upravitelev, 2016). Respondents were informed about the purpose of the study and provided informed consent before participating. Ethical considerations were strictly observed, including voluntary participation, confidentiality of personal information, and anonymity of responses. All data collected were used solely for research purposes.

The collected data were analyzed using statistical software such as SPSS. Descriptive statistics were used to summarize respondent characteristics and variable distributions (Guerard et al., 2016). Inferential analyses, including correlation and regression tests, were conducted to examine the relationship between social media exposure and young mothers' perceptions of basic immunization. The results were presented in tables and narratives to facilitate interpretation. This analytical approach enabled the study to draw evidence-based conclusions regarding the influence of social media on immunization perception among young mothers.

3. RESULTS AND DISCUSSIONS

Result

The respondents in this study were young mothers aged under 30 years, the majority of whom were first-time mothers. Most respondents had children aged between 0 and 24 months, which is a critical period for completing basic immunization. In terms of educational background, a large proportion of respondents had completed secondary education, while others had attained higher education (Croll & Attwood, 2013). Employment status varied, with respondents including housewives, private-sector employees, and self-employed mothers. These characteristics reflect a diverse group of young mothers who are actively involved in childcare and health-related decision-making.

The findings showed that social media use among respondents was very high. Most young mothers reported accessing social media on a daily basis, with many spending several hours per day browsing or interacting with content (Morris, 2014). The most frequently used platforms were Instagram and WhatsApp, followed by TikTok, Facebook, and YouTube. Respondents commonly used

social media to seek parenting advice, child health information, and peer support from other mothers. However, the level of trust in information varied, with some respondents indicating that they relied more on personal experiences shared by other mothers than on information from official health accounts.

Based on the analysis of perception indicators, respondents were categorized into three groups: positive, neutral, and negative perception toward basic immunization. The results indicated that most respondents had a positive perception, characterized by adequate knowledge of immunization benefits, supportive attitudes, and trust in vaccines. A smaller proportion of respondents exhibited a neutral perception, often expressing uncertainty or mixed feelings about vaccine safety. A limited number of respondents demonstrated a negative perception, marked by doubts, fear of side effects, or exposure to anti-immunization content on social media (Amatu, 2021).

Statistical analysis revealed a significant relationship between social media exposure and young mothers' perceptions of basic immunization. Higher frequency of exposure to credible and educational immunization-related content was positively associated with knowledge, attitudes, and trust toward immunization. Conversely, frequent exposure to unverified or misleading content was associated with increased uncertainty and negative perceptions. Regression analysis showed that content credibility and platform type were significant predictors of immunization perception, indicating that not only the amount but also the quality of social media information plays a crucial role in shaping young mothers' views on basic immunization. Overall, these findings suggest that social media has a substantial influence on young mothers' perceptions of basic immunization, emphasizing the importance of accurate and reliable health communication through digital platforms.

Certain social media platforms have stronger influence

Certain social media platforms have a stronger influence on young mothers' perceptions of basic immunization due to differences in platform characteristics, content formats, and patterns of user interaction. Platforms such as Instagram, TikTok, and WhatsApp tend to exert a greater impact because they align closely with the information-seeking behavior and emotional needs of young mothers during early motherhood (Nolan, 2019).

First, the visual and audiovisual nature of platforms like Instagram and TikTok enhances message persuasiveness. Short videos, infographics, and personal storytelling are more easily understood and remembered than text-based information. Content related to immunization that is delivered through visuals such as testimonials from other mothers, videos showing vaccination experiences, or simplified explanations by influencers can evoke emotional responses that strongly shape attitudes and beliefs (Cuesta-Cambra et al., 2019). This emotional engagement often outweighs rational evaluation of scientific evidence, making these platforms particularly influential.

Second, algorithm-driven content distribution increases exposure to specific narratives. Social media algorithms are designed to show users content similar to what they have previously viewed or engaged with. As a result, young mothers who interact with immunization-related content may repeatedly encounter similar messages, reinforcing particular beliefs. This mechanism can be beneficial when credible health information is promoted but problematic when misinformation or anti-immunization content dominates a user's feed, as repeated exposure can normalize doubt and fear (MacDonald & Dubé, 2020).

Third, peer influence and social validation play a major role on platforms such as WhatsApp and Facebook. Group chats, parenting communities, and closed forums allow mothers to exchange experiences and advice in a trusted environment. Information shared by peers or family members is often perceived as more credible than messages from formal health institutions. Testimonials from other mothers who report adverse experiences or express skepticism toward vaccines can significantly influence perception, even when such experiences are anecdotal and not scientifically verified.

In addition, the presence of influencers and opinion leaders strengthens the impact of certain platforms. Influencers who are perceived as relatable, trustworthy, or experienced in parenting can shape perceptions through recommendations and personal opinions. When influencers express

positive views on immunization, they can enhance acceptance; however, when they share misleading or fear-based narratives, they can contribute to vaccine hesitancy among their followers.

Finally, accessibility and immediacy contribute to the stronger influence of these platforms. Social media allows instant access to information at any time, often replacing direct consultation with healthcare professionals. For young mothers with limited time or restricted access to health services, social media becomes a primary reference point for decision-making. Consequently, platforms that offer quick, engaging, and socially reinforced content tend to have a greater influence on shaping perceptions of basic immunization.

Comparison of study results with previous research

The findings of this study are largely consistent with previous research that highlights the significant role of social media in shaping parents' and mothers' perceptions of childhood immunization. Similar to earlier studies, the present results indicate that frequent exposure to social media content particularly content perceived as credible is positively associated with knowledge, attitudes, and trust toward basic immunization (Ning et al., 2022). This supports the findings of prior research which demonstrated that parents who engage with evidence-based vaccine information on social media tend to show higher acceptance of immunization and greater confidence in vaccine safety.

In line with studies conducted by Betsch et al. (2010) and Wilson and Wiysonge (2020), this research confirms that social media serves as a double-edged sword in immunization communication. Previous studies emphasized that while social media can effectively disseminate public health information, it can also amplify misinformation and emotional narratives that contribute to vaccine hesitancy. The present study similarly found that young mothers who were frequently exposed to unverified or misleading content showed more neutral or negative perceptions toward immunization, reinforcing concerns raised in earlier literature about the risks of digital misinformation.

The results of this study also align with research by Smith et al. (2017) and Dunn et al. (2021), which reported that peer influence and personal testimonials on social media often have a stronger impact on vaccination decisions than official health messages. The current findings support this observation, as young mothers in this study tended to trust information shared by fellow mothers or influencers, particularly on platforms such as Instagram and WhatsApp. This suggests that emotional relatability and social validation play a crucial role in shaping immunization perceptions, as previously documented (Frew et al., 2022).

However, this study extends existing research by focusing specifically on young mothers as a distinct population group. While many previous studies examined parents in general, the current findings highlight that young mothers may be more susceptible to social media influence due to limited parenting experience, higher emotional sensitivity, and greater reliance on digital information. This supports the arguments of Aharon et al. (2017), who suggested that first-time and younger mothers are more vulnerable to vaccine-related misinformation due to uncertainty and lack of confidence in health decision-making.

Furthermore, unlike some earlier studies that focused primarily on immunization uptake as an outcome, this research emphasizes the process of perception formation, including knowledge, attitudes, beliefs, and trust. This approach provides a more nuanced understanding of how social media influences decision-making, complementing prior research that predominantly measured vaccination coverage or compliance (Yin, 2022). Overall, the findings of this study not only corroborate previous evidence but also contribute new insights into the mechanisms through which social media shapes immunization perceptions among young mothers.

The role of digital health literacy

Digital health literacy plays a crucial role in shaping how young mothers interpret, evaluate, and respond to immunization-related information encountered on social media (Song, 2018). In the context of this study, digital health literacy refers to the ability to search for, understand, assess the credibility of, and apply online health information to make informed decisions regarding basic immunization. The findings suggest that differences in digital health literacy significantly influence whether social media exposure leads to positive understanding or increased uncertainty and vaccine hesitancy.

Young mothers with higher levels of digital health literacy tend to demonstrate better knowledge and more positive attitudes toward basic immunization (Lorini et al., 2018). These mothers are more capable of distinguishing credible information from misinformation by recognizing authoritative sources such as official health institutions, licensed healthcare professionals, and evidence-based content. They are also more likely to cross-check information across multiple sources and interpret scientific explanations appropriately. As a result, social media serves as a supportive tool that reinforces trust in immunization rather than undermining it.

In contrast, limited digital health literacy increases vulnerability to misleading and emotionally driven content. Mothers who lack the skills to critically evaluate online information are more likely to accept personal testimonials, sensational headlines, or viral narratives without questioning their accuracy (Cooke, 2018). Anti-immunization messages that emphasize fear, conspiracy theories, or anecdotal adverse events can be particularly persuasive for this group, shaping negative beliefs and heightened risk perception. This finding is consistent with previous studies indicating that low digital health literacy is a key determinant of vaccine misinformation susceptibility.

Moreover, digital health literacy mediates the influence of social media algorithms and peer networks. While algorithms repeatedly expose users to similar content, digitally literate mothers are better equipped to recognize bias and avoid echo chambers. They are also more cautious in accepting peer-shared information in online parenting groups, understanding that personal experiences do not necessarily represent scientific evidence. Conversely, mothers with limited literacy may interpret repeated exposure as confirmation of truth, reinforcing misperceptions about immunization.

These findings underscore the importance of integrating digital health literacy into public health strategies aimed at improving immunization acceptance. Enhancing young mothers' capacity to critically assess online health information can reduce the negative impact of misinformation and maximize the benefits of social media as a health education tool. Therefore, interventions such as digital literacy training, promotion of verified health accounts, and collaboration with trusted influencers are essential to support informed decision-making and strengthen confidence in basic immunization among young mothers (Melwani et al., 2022).

Public Health Implications

The findings of this study have important implications for public health practice, particularly in the context of increasing reliance on social media as a primary source of health information among young mothers. One of the most significant risks identified is the spread of unchecked misinformation related to basic immunization (Van Der Linden, 2022). Without adequate monitoring and verification, misleading content such as vaccine myths, exaggerated side effects, and conspiracy narratives can circulate rapidly and widely across social media platforms. This misinformation can distort risk perception, reduce trust in immunization programs, and contribute to vaccine hesitancy, ultimately threatening herd immunity and increasing the risk of outbreaks of vaccine-preventable diseases.

At the same time, social media presents substantial opportunities for health promotion and immunization advocacy. When used effectively, these platforms can serve as powerful tools for disseminating accurate, timely, and engaging health information. Visual content, short educational videos, interactive discussions, and culturally appropriate messages can enhance understanding and positively influence attitudes toward immunization (Odone et al., 2015). Social media also enables targeted communication, allowing public health authorities to reach young mothers directly through the platforms they use most frequently. By leveraging social media algorithms and trends, health promotion messages can be amplified and made more accessible to wider audiences.

Healthcare workers play a critical role in maximizing the benefits of social media while minimizing its risks (Ventola, 2014). As trusted sources of health information, nurses, midwives, and physicians can actively engage in digital spaces to provide evidence-based content, clarify misconceptions, and respond to concerns raised by young mothers. Their presence on social media can enhance credibility and counterbalance misinformation shared by non-expert sources. Additionally, healthcare workers can collaborate with influencers, community leaders, and health institutions to strengthen public trust and ensure consistent messaging about immunization.

Overall, integrating social media into public health strategies requires a proactive and coordinated approach. Strengthening digital health literacy, promoting verified health information, and encouraging healthcare workers' digital engagement are essential steps toward improving immunization perceptions and acceptance among young mothers. By addressing misinformation and harnessing the potential of social media for health promotion, public health systems can better protect children and support informed decision-making in the digital era.

4. CONCLUSION

This study demonstrates that social media plays a significant role in shaping young mothers' perceptions of basic immunization. The findings indicate that social media exposure influences mothers' knowledge, attitudes, beliefs, and trust toward immunization, with the direction of influence largely determined by the credibility, frequency, and type of content encountered. Platforms that emphasize visual storytelling, peer interaction, and influencer engagement were found to have a particularly strong impact on perception formation. While exposure to accurate and evidence-based information was associated with positive perceptions, frequent encounters with misinformation contributed to uncertainty and negative attitudes toward immunization. The results confirm that social media functions as a double-edged tool in the context of public health. On one hand, it offers opportunities for effective health education and engagement; on the other hand, it poses serious risks when misinformation is left unregulated. Young mothers, due to their high reliance on digital information and varying levels of digital health literacy, are especially vulnerable to both positive and negative influences from online content. These findings have important practical implications. For health workers, especially nurses and midwives, active digital engagement is essential to provide credible information, address misconceptions, and build trust with young mothers. Policymakers should consider integrating digital health strategies into national immunization programs, including the regulation of health misinformation and the promotion of verified health communication channels. Public health campaigns should leverage social media platforms strategically by using culturally appropriate messages, visual content, and collaborations with trusted influencers to reach young mothers effectively. Despite its contributions, this study has several limitations. The cross-sectional design limits the ability to establish causal relationships, and the reliance on self-reported data may introduce response bias. Additionally, the study did not fully explore differences across cultural or socioeconomic contexts, which may influence social media use and perception. Future research is recommended to adopt longitudinal or mixed-methods designs to better understand changes in perception over time and the underlying mechanisms of influence. Further studies should also explore the role of digital health literacy interventions and compare the effectiveness of different social media platforms in promoting immunization acceptance. Such research would provide deeper insights to support more targeted and sustainable public health interventions aimed at improving childhood immunization coverage among young mothers.

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