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Determinants and Predictors of Health Misinformation Sharing Through Social Media Among Adults: A Cross-Sectional Analytical Study

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ABSTRACT

Introduction: Social media has become a major source of health information but also facilitates the spread of misinformation, posing significant public health risks. Influenced by socio-demographic, cognitive, and behavioral factors, misinformation affects health decisions and trust. This study aims to assess the determinants and predictors of health misinformation sharing among adults.

Materials and Methods: A community-based cross-sectional study was conducted among 422 adults using multistage sampling. Data were collected via a pre-tested questionnaire on socio-demographics, social media use, digital health literacy, and misinformation behavior. Chi-square test and multivariate logistic regression identified predictors, with adjusted odds ratios and 95% confidence intervals; $p<0.05$ was considered significant.

Results: Among 422 participants, 63.5% used social media >2 hours daily and 70.6% were frequently exposed to health information; 37.4% shared misinformation. Low digital literacy (AOR 3.12), high usage (AOR 2.45), low education, and high trust predicted sharing. Belief in misinformation was significantly higher among individuals with low digital health literacy and high trust in social media. Altruism and emotional content drove sharing, while awareness and preventive practices were limited.

Conclusion: Low digital health literacy, prolonged social media use, lower education, and high trust in social media were key predictors of misinformation sharing. Strengthening digital literacy, promoting critical evaluation, and improving access to reliable health information are essential to reduce misinformation spread and protect public health.

Keywords*: Health misinformation, social media, digital health literacy, misinformation sharing, adults.*

INTRODUCTION

The rapid expansion of social media platforms has transformed the way individuals access, consume, and disseminate health-related information. Increasingly, adults rely on platforms such as Facebook, Twitter, YouTube, and Instagram as primary sources of health knowledge, often bypassing traditional healthcare channels. While this democratization of information has improved accessibility, it has simultaneously facilitated the widespread dissemination of health misinformation, defined as false or misleading health-related claims lacking scientific evidence [1]. Health misinformation has emerged as a significant public health concern due to its potential to influence health behaviors, undermine trust in healthcare systems, and contribute to adverse health outcomes. Several studies have reported that

misinformation related to vaccines, chronic diseases, and medical treatments is highly prevalent across social media platforms, with misleading content constituting a substantial proportion of online health information [1,2]. The COVID-19 pandemic further highlighted the scale of this problem, with the World Health Organization describing it as an "infodemic," where excessive and unreliable information spreads rapidly, complicating public health responses.

The spread of health misinformation is influenced by a complex interplay of socio-demographic, cognitive, and behavioral factors. Studies have shown that individual characteristics such as age, education level, digital literacy, and trust in healthcare systems significantly affect susceptibility to misinformation [3,4]. Additionally, psychological factors including confirmation bias, perceived credibility of sources, and emotional engagement with content play a critical role in determining whether individuals believe and share misleading information [5]. Social media algorithms that prioritize engagement further amplify such content, increasing its reach and impact. Recent research has also demonstrated that exposure to health misinformation can negatively affect public trust in healthcare institutions and influence decision-making related to treatment and preventive practices [4]. Moreover, the general public often faces challenges in distinguishing credible information from misinformation, particularly in the absence of adequate digital health literacy [3]. Emerging evidence highlights that misinformation is not only passively consumed but actively shared by users, thereby accelerating its propagation within online networks [6]. Despite growing recognition of this issue, there remains a paucity of analytical studies examining the determinants and predictors of spread of health misinformation among adults, particularly in low- and middle-income settings. Understanding these factors is essential for designing targeted interventions aimed at improving digital health literacy and mitigating the harmful effects of misinformation. Therefore, the present study aims to assess the determinants and predictors influencing the spread of health misinformation through social media among adults.

MATERIALS AND METHODS:

A community-based cross-sectional analytical study was conducted among adults aged 18 years and above to assess the determinants and predictors of health misinformation sharing through social media. Ethical clearance was obtained from the Institutional Ethics Committee, and informed consent was obtained from all participants. Confidentiality and anonymity were strictly maintained. The study was carried out over a period of six months (July–December 2025) in both urban and rural field practice areas attached to a tertiary care teaching institution. Individuals who had been using at least one social media platform for the past six months were included in the study. Participants who were unable to respond due to severe illness or cognitive impairment were excluded. Sample size was calculated using the formula: $n = (Z^2 \times p \times q) / d^2$. Assuming the prevalence (p) of misinformation sharing as 50% (in the absence of prior local data), with 95% confidence level (Z = 1.96) and absolute precision (d) of 5%, the minimum sample size was 384. After accounting for a 10% non-response rate, the final sample size was 422 participants. A multistage sampling technique was employed. Initially, clusters (villages/urban wards) were selected using simple random sampling. Subsequently, households within each cluster were selected using systematic random sampling. From each selected household, one eligible adult was chosen using a simple random method.

Data were collected using a pre-tested, semi-structured questionnaire comprising four sections: socio-demographic characteristics, social media usage patterns, digital health literacy, and behavior related to health misinformation, including exposure, belief, and sharing practices. The primary outcome variable, "misinformation sharing," was defined based on self-reported sharing or forwarding of health-related information on social media without verifying its authenticity from reliable or official sources. Belief in misinformationwasdefined as acceptance of unverified or false health-related information encountered on social media as true despite it being unverified or misleading. Digital health literacy was assessed using a standardized scale adapted to the local context and categorized into low, moderate, and adequate levels. 'Low' indicates limited ability to search, understand, and evaluate online health information. 'Moderate' indicates partial ability to assess credibility and interpret health information and 'Adequate' indicates good ability to critically evaluate and use reliable digital health information. Additional variables included duration of social media use, number of platforms used, and level of trust in social media as a source of health information. Data were entered in Microsoft Excel and analyzed using Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics were expressed as frequencies and proportions. Bivariate analysis was performed using the Chi-square test to assess associations between independent variables and misinformation sharing. Variables with p-value < 0.2 were included in multivariate logistic regression analysis to identify independent predictors. Adjusted odds ratios (AOR) with 95% confidence intervals were calculated, and p-value < 0.05 was considered statistically significant.

RESULTS:

A total of 422 participants were included in the study. Table 1 shows that the majority belonged to the age group of 18–30 years (38.4%), followed by 31–45 years (35.1%), while only 7.1% were aged above 60 years. The study population had a nearly equal gender distribution, with 51.7% males and 48.3% females. Regarding educational status, nearly half of the them (48.3%) were graduates or above, while 34.6% had completed secondary education and 17.1% had education up to primary level. In terms of occupation, 39.8% were skilled or professionals, 32.2% were semi-skilled, and 28.0% were unemployed or homemakers. More than half of the respondents (50.7%) belonged to the middle socioeconomic class,

followed by upper (26.6%) and lower (22.7%) classes. Notably, over half of the study participants (50.7%) had low digital health literacy, while 29.9% had moderate and only 19.4% had adequate digital health literacy.

Table 1: Characteristics of study participants (n = 422)

Variable		n (%)
Age (years)	18–30	162 (38.4)
	31–45	148 (35.1)
	46–60	82 (19.4)
	>60	30 (7.1)
Gender	Male	218 (51.7)
	Female	204 (48.3)
Education	Up to primary	72 (17.1)
	Secondary	146 (34.6)
	Graduate & above	204 (48.3)
Occupation	Unemployed/Housewife	118 (28.0)
	Semi-skilled	136 (32.2)
	Skilled/Professional	168 (39.8)
Socioeconomic status	Lower	96 (22.7)
	Middle	214 (50.7)
	Upper	112 (26.6)
Digital health literacy level	Low	214 (50.7)
	Moderate	126 (29.9)
	Adequate	82 (19.4)

As shown in Table 2, with regard to social media usage, a majority of them (63.5%) reported using social media for more than 2 hours per day, and 57.8% used multiple platforms. Most participants (70.6%) were frequently exposed to health-related information online, while 29.4% reported less frequent exposure. In terms of the ability to evaluate information, 44.1% of participants reported being unable to verify the authenticity of health-related information, whereas 55.9% were able to verify such information. Regarding response to health misinformation, 40.8% of participants reported believing misinformation, while 59.2% did not believe it. Furthermore, 37.4% admitted to sharing health misinformation, whereas 62.6% reported not sharing such information.

Table 2: Social media usage and exposure to health misinformation (n = 422)

Variable		n (%)
Social media usage pattern	Daily social media use (>2 hours)	268 (63.5)
	Use of multiple platforms (>2)	244 (57.8)
Exposure to health information	Frequently exposed to health-related information online	298 (70.6)
	Not frequently exposed to health-related information online	124 (29.4)
Ability to evaluate information	Unable to verify authenticity of health information	186 (44.1)
	Verified authenticity of health information	236 (55.9)
Response to health misinformation	Belief in misinformation	172 (40.8)
	No belief in misinformation	250 (59.2)
	Shared misinformation	158 (37.4)
	Did not share misinformation	264 (62.6)

Bivariate analysis in Table 3 revealed several factors to be significantly associated with misinformation sharing. A higher proportion of participants with education up to secondary level reported sharing misinformation compared to those with graduate and above education (46.6% vs 27.5%, p=0.004). Similarly, participants who used social media for more than 2 hours daily had significantly higher sharing behavior than those with lesser usage (46.3% vs 22.1%, p<0.001). Digital health literacy showed a strong association, with more than half (52.3%) of participants with low literacy sharing misinformation compared to only 22.1% among those with adequate literacy (p<0.001). Participants with high trust in social media were also more likely to share misinformation than those with low trust (49.0% vs 27.0%, p=0.001). Additionally, residence was found to be significantly associated, with urban participants reporting higher misinformation sharing compared to rural participants (42.7% vs 31.7%, p=0.032).

Table 3: Association between variables and misinformation sharing

Variable	Shared n (%)	Not Shared n (%)		p-value
Education	≤Secondary	102 (46.6)	116 (53.4)	**0.004**
	Graduate+	56 (27.5)	148 (72.5)	
Daily use (>2 hrs)	Yes	124 (46.3)	144 (53.7)	**<0.001**
	No	34 (22.1)	120 (77.9)	
Digital health literacy	Low	112 (52.3)	102 (47.7)	**<0.001**
	Adequate	46 (22.1)	162 (77.9)	
Trust in social media	High	98 (49.0)	102 (51.0)	**0.001**
	Low	60 (27.0)	162 (73.0)	
Residence	Urban	94 (42.7)	126 (57.3)	**0.032**
	Rural	64 (31.7)	138 (68.3)	

Multivariate logistic regression analysis identified several independent predictors of misinformation sharing as seen in Table 4. Participants with low digital health literacy had significantly higher odds of sharing misinformation compared to those with adequate literacy (AOR: 3.12; 95% CI: 1.95–4.98; p<0.001). Similarly, individuals using social media for more than 2 hours daily were 2.45 times more likely to share misinformation (AOR: 2.45; 95% CI: 1.52–3.94; p<0.001). Lower educational status was also a significant predictor, with participants having education up to secondary level showing higher odds of misinformation sharing compared to graduates and above (AOR: 1.88; 95% CI: 1.12–3.14; p=0.016). In addition, participants with high trust in social media were more likely to share misinformation (AOR: 2.21; 95% CI: 1.36–3.58; p=0.001). Age above 45 years was not found to be a significant predictor of misinformation sharing (AOR: 1.42; 95% CI: 0.82–2.45; p=0.210).

Table 4: Multivariate logistic regression (Predictors of misinformation sharing)

Variable	AOR (95% CI)	p-value
Low digital health literacy	3.12 (1.95–4.98)	**<0.001**
Daily use >2 hrs	2.45 (1.52–3.94)	**<0.001**
Low education	1.88 (1.12–3.14)	**0.016**
High trust in social media	2.21 (1.36–3.58)	**0.001**
Age >45 years	1.42 (0.82–2.45)	0.210

Figure 1 shows that, among the participants who reported sharing health misinformation (n=158), the most common reason cited was the perception that the information might help others (60.8%). This was followed by trust in the source or person sharing the information (45.6%) and the influence of emotional content (40.5%). Additionally, 36.7% of participants reported lack of knowledge to verify the information as a reason for sharing, while 26.6% cited urgency of the message as a contributing factor.

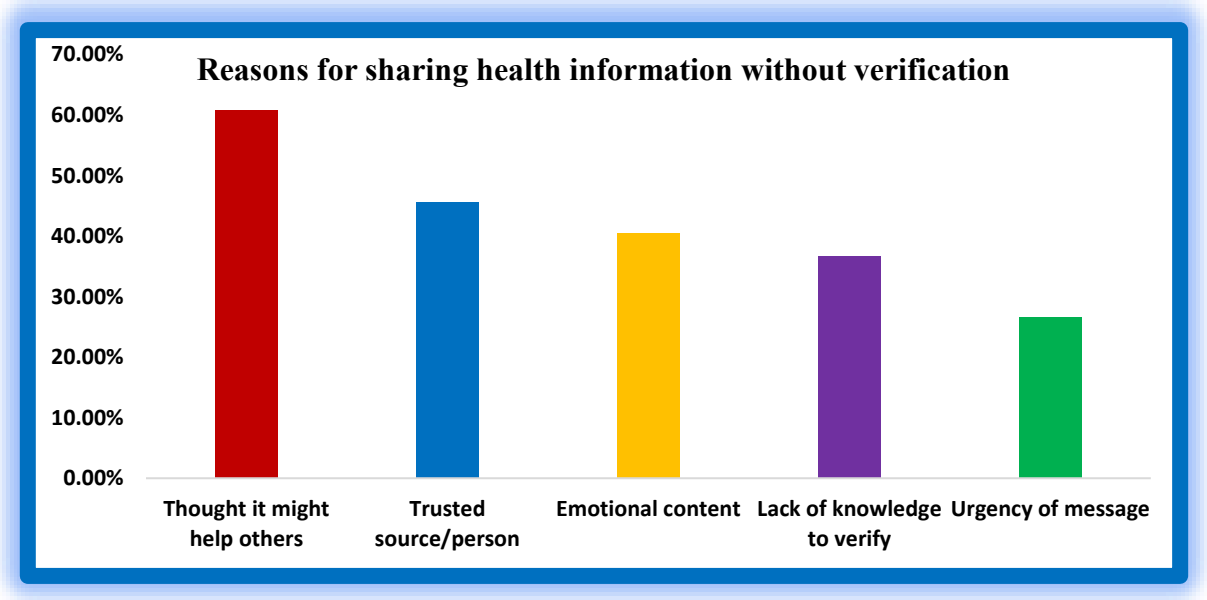

Figure 1: Reasons for sharing health information without verification (n = 158)

Analysis of factors influencing belief in health misinformation in Table 5 showed significant associations with education, digital health literacy, and trust in social media. A significantly higher proportion of participants with education up to

secondary level reported belief in misinformation compared to those with graduate and above education (56.6% vs 23.5%, p=0.002). Similarly, belief in misinformation was markedly higher among participants with low digital health literacy compared to those with adequate literacy (64.5% vs 16.3%, p<0.001). Trust in social media also played a significant role, with 61.0% of participants having high trust accepting misinformation, compared to only 22.5% among those with low trust (p<0.001).

Table 5: Factors influencing belief in misinformation

Factor		Belief in misinformationn (%)	No belief in misinformation n (%)	p-value
Education	≤Secondary	124 (56.6)	94 (43.4)	**0.002**
	Graduate+	48 (23.5)	156 (76.5)	
Digital literacy	Low	138 (64.5)	76 (35.5)	**<0.001**
	Adequate	34 (16.3)	174 (83.7)	
Trust in social media	High	122 (61.0)	78 (39.0)	**<0.001**
	Low	50 (22.5)	172 (77.5)	

Regarding awareness of health misinformation as shown in Table 6, 39.8% of participants reported being aware of the term "misinformation," while 33.6% knew how to verify health-related information. Awareness of official health information sources was reported by 29.9% of participants. In terms of preventive practices, 44.1% of participants reported cross-checking information with reliable sources, while 33.6% ignored suspicious messages. A smaller proportion consulted healthcare professionals (23.2%) or reported misinformation (15.2%) as preventive measures.

Table 6: Awareness and preventive practices against health misinformation (n = 422)

Variable		n (%)
Awareness regarding health misinformation	Aware of term "misinformation"	168 (39.8)
	Knows how to verify information	142 (33.6)
	Aware of official health sources	126 (29.9)
Preventive practices against misinformation	Cross-checking with reliable sources	186 (44.1)
	Consulting healthcare professionals	98 (23.2)
	Ignoring suspicious messages	142 (33.6)
	Reporting misinformation	64 (15.2)

DISCUSSION:

The present study assessed the determinants and predictors of spread of health misinformation through social media among adults and identified key behavioral and socio-demographic factors influencing exposure, belief, and sharing of misinformation. A large proportion of participants in this study reported frequent social media use and high exposure to health-related information. This finding is consistent with earlier studies, which have documented widespread exposure to health misinformation across multiple digital platforms [1,2]. The high prevalence of exposure observed in our study further supports the concept of an "infodemic," as described by the World Health Organization, where excessive information—both accurate and misleading—circulates rapidly [7,8]. Digital health literacy emerged as a strong determinant and independent predictor of misinformation sharing in our study. Participants with low digital literacy were significantly more likely to both believe and share misinformation. These observations are consistent with findings reported by Chen et al. [5] and Papanikou et al. [6], who highlighted that inadequate ability to critically appraise online information plays a significant role in the spread of misinformation. Furthermore, recent research suggests that individuals with limited digital literacy are more susceptible to misinformation, primarily due to difficulties in distinguishing credible sources from unreliable ones [9]. However, some studies have suggested that even individuals with higher literacy levels may be influenced by misinformation due to cognitive biases and information overload, which contrasts with our findings, where adequate literacy appeared protective [10]. Education was another important factor influencing misinformation behavior. Participants with lower educational status were more likely to believe and share misinformation, which is in agreement with the findings of Ghenai and Mejova [11], who emphasized the role of user characteristics such as education in misinformation propagation. However, a qualitative study by Sathianathan et al. [3] reported that even well-educated individuals may rely on heuristics such as trust and emotional appeal, suggesting that education alone may not fully prevent spread of misinformation, which partially contrasts with our findings.

Trust in social media was significantly associated with both belief and sharing of misinformation. Participants with higher trust were more likely to accept and disseminate misinformation. This finding is supported by Stimpson et al. [4], who demonstrated a strong association between perceived credibility of online information and public trust. Additionally, emotional and persuasive content has been shown to enhance trust and engagement, thereby increasing the likelihood of misinformation sharing [12,13]. Behavioral factors also played a crucial role in misinformation dissemination. In our study, the most common reason for sharing misinformation was the perception that the information might help others,

followed by trust in the source and emotional influence. These findings are in line with previous studies, which indicate that misinformation is often shared due to altruistic intentions and emotional engagement rather than deliberate misinformation [3,14]. Interestingly, age was not found to be a significant predictor in our study. This finding is in contrast with some studies that report higher susceptibility to misinformation among older adults due to lower digital literacy and higher trust in online information [2,15]. The difference may be attributed to variations in demographic composition and social media usage patterns across study populations. Furthermore, awareness and preventive practices related to misinformation were found to be suboptimal. Less than half of the participants were aware of misinformation or engaged in verification practices. This finding is supported by previous studies emphasizing the need for improved digital health education and public awareness to combat misinformation [5,16]. Strengthening digital literacy and promoting critical evaluation skills are essential strategies to mitigate the spread of misinformation. Overall, the findings of this study highlight the complex interplay between digital literacy, education, trust, and behavioral factors in influencing spread of health misinformation. Targeted interventions focusing on improving digital health literacy and promoting responsible social media use are essential to address this growing public health concern.

CONCLUSION:

This study demonstrates that health misinformation sharing is driven by a combination of digital, educational, and behavioral factors. Low digital health literacy, prolonged social media use, lower education, and high trust in social media significantly increase the likelihood of misinformation dissemination. Strengthening digital literacy, improving awareness, and promoting evidence-based communication are essential to address this growing public health challenge.

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