ORIGINAL ARTICLE

Influence of determinant factors on Jambi medical students' awareness of seeking oral health information on social media: a cross-sectional study

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ABSTRACT

Introduction: Social media has become an effective and easily accessible means of acquiring oral health literacy in the digital era 5.0. Therefore, this study aimed to analyze the influence of determinant factors affecting Jambi medical students' awareness of seeking oral health information on social media. **Method**: This analytical cross-sectional study analyzed the association between determinant factors affecting Jambi medical students' awareness of seeking oral health literacy on social media. A total of 292 participants were selected using purposive sampling. The instrument was divided into five sections. The second and fifth sections were measured using a Likert scale and analyzed using multiple linear regression. **Results**: The higher the frequency of seeking oral and dental health information through social media, the greater the awareness of seeking oral health information on social media (regression coefficient=0.581; t=10.248; p<0.001). A higher level of trust was also associated with greater awareness of seeking oral and dental health information on social media (regression coefficient=0.431; t=10.314; p<0.001). Respondents with good oral and dental health maintenance behavior were more likely to be positively influenced by oral and dental health information and content on social media (regression coefficient=0.344; t=8.255; p<0.001). **Conclusion**: Social media plays an important role in shaping individual awareness, particularly when users have high levels of trust and actively seek relevant oral and dental health information. Trust was identified as a key determinant in influencing awareness of oral health literacy on social media.

KEYWORDS

Awareness, determinants, oral health, literacy, associations

INTRODUCTION

Social media is one of the most accessible and effective platforms for obtaining health information in the contemporary world, particularly for oral health literacy. These platforms, including Instagram, Telegram, YouTube, and WhatsApp, are not only appealing to the general public but have also been shown to improve oral health knowledge and behavior, particularly among adolescents.[1] Students and adolescents tend to seek health information through social media because of its ease of access and convenience of obtaining health information

online. This is particularly common in medical education, where effective communication and health literacy awareness are crucial for enabling students to convey information clearly and empathetically.[2,3]

The internet penetration rate in Indonesia among individuals aged 12-27 years is estimated at 87.02%, with 23.13% actively accessing health content, including oral health literacy, through social media. According to the Indonesian Internet Service Providers Association (APJII), 42.27% of individuals aged 13-28 prefer TikTok as their primary social media platform.[4,5] Data from the Jambi Province Statistics Agency (BPS) also shows that 93.01% of the population uses the internet for household needs, indicating widespread internet access and the considerable potential of social media as a source of health information.[6]

Students' awareness is a crucial factor in oral health.[7] Their awareness is influenced by habits such as tooth brushing, regular dental visits, and satisfaction with dental care. The use of social media as a health education platform has proven effective in increasing students' health awareness.[8,9] A study by Atalla et al. showed that educational interventions delivered through Facebook, comprising weekly educational posts and assessments, increased the knowledge of pharmacy, medical, and nursing students by up to 36.2%.[9]

Oral health literacy awareness among medical students on social media is an important factor influencing professional behavior and health decision-making. Although medical students have high social media use, their oral health knowledge and behavior still require improvement.[10,11] Online searches for oral health information are positively associated with oral health knowledge, attitudes, and practices.[12]

The fundamental role of oral health literacy in promoting optimal dental health behaviors, such as frequent tooth brushing and regular dental visits, has been consistently demonstrated.[13–15] Given their central position as future health advocates, medical students represent a strategic cohort for cultivating and disseminating robust oral health awareness, both for themselves and within the broader community. However, the landscape of oral health literacy is inherently complex and is profoundly shaped by diverse influences, including linguistic nuances, cultural backgrounds, and parental education levels. These factors critically modulate individuals' trust in and propensity to seek oral health information, particularly from pervasive modern sources such as social media.[13,14]

Despite the growing recognition of social media's potential as an oral health education platform, a significant gap persists in our understanding of the specific determinants driving medical students' awareness in seeking oral health literacy through these digital channels. Existing research often highlights broad associations, yet it rarely delves into the intricate interplay among factors within this unique demographic and information environment. Crucially, prior investigations have not adequately elucidated how the frequency of information seeking, the level of trust in social media sources, and pre-existing oral health maintenance behaviors collectively shape this awareness.

Therefore, this study offers a critical advancement by moving beyond descriptive correlation to rigorously investigate these underexamined specific determinants. We posit that the frequency of information seeking directly influences exposure to and assimilation of knowledge, reflecting the extent to which students actively engage with oral health content. Concurrently, the level of trust in digital sources is paramount to the credibility and adoption of health messages, especially amidst the varied quality of information prevalent on social media. Furthermore, pre-existing oral health maintenance behaviors serve as indicators of initial engagement and the potential for subsequent behavioral reinforcement or modification. By focusing on these interconnected variables, this study addresses an important gap in the current literature. Therefore, this study aims to analyze the influence of determinant factors affecting Jambi medical students' awareness of seeking oral health information on social media.

METHODS

An analytical cross-sectional study design was used with a focus on assessing the associations between the determinants of awareness among medical students at Jambi University in seeking oral health literacy on social media. The determinants included the frequency of seeking oral health information, level of trust, and behavior in maintaining oral health. This study was conducted at the Medical Study Program, Faculty of Medicine and Health Sciences, Jambi University, from June to August 2025.

The population comprised all preclinical students in the Medical Study Program at the Faculty of Medicine and Health Sciences, Jambi University. The sample was selected using purposive sampling from all year classes, with the inclusion criteria of being an active student, willing to participate, and having access to social media. Meanwhile, the exclusion criterion was students in the medical profession/internship program.

The sample size for this study was calculated using the Kish Leslie formula.[16] The calculation used a normal standard deviation with a confidence level of 0.95 (Z), and the prevalence of interest (p) was obtained from the 2024 APJII survey, which included Gen Z users accessing health content on social media. Therefore, the minimum sample size for this study was 246. To account for respondents who might drop out, the sample size was increased by 20%, resulting in a total of 292 participants. This sample calculation was identical to that used in a previous study, Overview of Awareness and Satisfaction of Jambi University Medical Students towards the Use of Social Media as an Oral Health Literacy Platform.[17]

The measurement tool was a questionnaire adapted and modified from the instrument developed by Jayasinghe et al. and Maharani et al.[16,18] The original questionnaire was in English; therefore, the researcher translated it into Indonesian and subsequently performed a cross-cultural adaptation. The questions were modified and adjusted to suit the objectives of this study.[19]

The instrument was divided into several sections. The first section contained informed consent stating that respondents agreed the data provided would be used in the study. The second section contained questions on the frequency of seeking health information (5 questions), while the third section comprised questions on the level of trust (6 questions). In addition, the fourth section contained questions on oral and dental health behavior (6 questions). The fifth section contained questions on medical students' awareness of seeking oral and dental health literacy on social media (7 questions). The second and fifth sections were measured using a five-point Likert scale, ranging from 1 = strongly disagree to 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

The first phase of questionnaire distribution was conducted from June to July 2025 using a Google Form distributed through WhatsApp to students, with assistance from educational staff. It was conducted as a preliminary study to assess the validity and reliability of the instrument. The validity test used the Pearson Product-Moment correlation, with an r-table value of 0.361. The results showed that the majority of indicators for each variable had calculated r values greater than the r-table value, indicating that the questionnaire items were valid. Meanwhile, the reliability test results showed that the Cronbach's Alpha values for each variable were greater than the standard value (0.7). These results indicated that the variables had sufficient reliability and could be used for further analysis.

This phase was conducted because students were on semester break. The second phase of questionnaire distribution was carried out at the Medical Study Program, Faculty of Medicine and Health Sciences, Jambi University, at the end of August 2025. The study team visited each classroom from the 2022-2025 cohorts during free periods or after classes had ended. The questionnaire was prepared in paper form, and respondents completed it voluntarily. The team was assisted by field coordinators from each cohort to ensure that the questionnaire distribution ran smoothly.

After all questionnaires were collected from the field coordinators, the team entered the data into a Google Form to facilitate data entry and improve efficiency. Respondents were excluded if they did not provide informed consent, did not return the questionnaire, or provided informed consent but did not use social media platforms to access oral health literacy content. The collected data were subsequently analyzed using IBM SPSS Statistics 29.

The analytical approach began with a univariate analysis to characterize the respondents. Subsequently, multiple linear regression was employed to investigate the associations between the independent variables, namely the frequency of seeking oral health information, level of trust, and behavior in maintaining oral health (X1, X2, and X3), and the dependent variable, medical students' awareness of seeking oral health literacy on social media (Y).

RESULTS

This study used 30 samples as a preliminary investigation to assess the validity and reliability of the instrument. This study involved 292 respondents (Table 1). Based on univariate analysis, the majority of respondents were females (203; 69.5%), while 89 (30.5%) were males. Most respondents were from the class of 2025 (82; 28.1%), followed by the class of 2022 (72; 24.7%), the class of 2024 (70; 24%), the class of 2023 (64; 21.9%), and the fewest were from the class of 2021 (4; 1.4%). Respondents ranged in age from 17 years to 23 years, with a mean age of 19.47 (SD=1.376).

Table 1. Frequency distribution of sosiodemographic characteristics (N = 292)

Sociodemographic Characteristic	f	n (%)
Sex		
Male	89	30.5
Female	203	69.5
Year of Enrollment		
Class of 2021	4	1.4
Class of 2022	72	24.7
Class of 2023	64	21.9
Class of 2024	70	24
Class of 2025	82	28.1
Age (years)		
Range	17-23	
Mean (SD)	19.47 (±1.376)	

Multiple linear regression analysis was performed to examine the relationships between several key constructs. The frequency of seeking oral health information (X1), the level of trust (X2), and behavior in maintaining oral health (X3) were included as the independent variables. Awareness of seeking oral health literacy (Y) was included as the dependent variable.

Table 2. Coefficient of determination of the regression model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.889[a]	0.790	0.788	1.508

a. Predictors: (Constant), Behavior in Maintaining Dental and Oral Health (X3), Frequency of Seeking Information (X1), Level of Trust (X2)

b. Dependent variable: Awareness of Seeking Dental and Oral Health Literacy on Social Media

The R Square (R2) value (Table 2) indicates that 79.0% of the variation in awareness of seeking oral health literacy on social media can be explained by the three independent variables. In other words, these variables together make a substantial contribution to variation in awareness of seeking oral health literacy on social media. The remaining 21.0% is explained by other variables not

examined in this study, such as social environmental factors, personal experiences, or exposure to media other than social media.

The adjusted R Square value of 0.788 strengthens the findings because it accounts for the number of independent variables included in the model. This value shows that even after adjustments for the number of predictors, the three independent variables still explained 78.8% of the variation in awareness of seeking oral health literacy on social media. Therefore, the regression model used in this study demonstrated a high level of goodness of fit. The model can be used to explain the relationship between the variables examined.

The standard error of the estimate of 1.508 indicates the level of error or deviation between the values predicted by the regression model and the observed values of the dependent variable. This relatively small value suggests that the regression model has good predictive ability because the difference between the predicted and observed values is relatively small. In general, the smaller the standard error of the estimate, the greater the accuracy of the regression model in describing the relationship between the variables studied.

Multiple linear regression analysis showed that three independent variables were tested against the dependent variable, namely awareness in seeking dental and oral health literacy on social media (Y). The independent variables included frequency of seeking dental and oral health information (X1), level of trust (X2), and behavior in maintaining dental and oral health (X3). The resulting regression equation is as follows:

The constant value of -2.571 indicates that when all independent variables are equal to zero, the predicted awareness score for seeking dental and oral health literacy on social media is -2.571.

Table 3. Multiple linear regression analysis coefficients

Model	Unstandardized Coefficients		Standardized Coefficients (Beta)	t	p-value
	B	Std.Error			
(Constant)	-2.571	0.944		-2.723	0.007
X1[a]	0.581	0.057	0.369	10.248	< 0.001
X2[b]	0.431	0.042	0.391	10.314	< 0.001
X3[c]	0.344	0.042	0.283	8.255	< 0.001

a. Frequency of seeking dental and oral health information
b. Level of trust
c. Behavior in maintaining dental and oral health

This constant value of -2.571 was theoretical and represented the starting point of the regression model when there was no influence from the independent variables. The regression coefficient for the frequency of seeking dental and oral health information (X1) was 0.581 with a *t* value of 10.248 and $p < 0.001$ (Table 3). This coefficient indicated that a one-unit increase in the frequency of seeking dental and oral health information would increase awareness by 0.581 points, assuming other variables remained constant. In other words, the more frequently an individual sought dental and oral health information through social media, the greater the influence of awareness. This effect was statistically significant.

The regression coefficient for the level of trust (X2) was 0.431 with $t = 10.314$ and $p < 0.001$ (Table 3), indicating that every one-unit rise in the level of trust would increase awareness in seeking oral health literacy on social media by 0.431 points, assuming other variables remained constant. These results indicated that the higher the level of individual trust in information, the greater the influence of awareness in seeking oral health literacy on social media. This effect was also statistically significant. The regression coefficient for oral health behavior (X3) was 0.344, with $t = 8.255$ and $p < 0.001$, indicating that every one-unit rise in oral health behavior would increase awareness in seeking oral health literacy on social media by 0.344 points. This indicated that individuals with good oral health behaviors tended to be more positively influenced by health information and content on social media.

Based on the standardized coefficients (Beta) values, the variable with the strongest influence on awareness in seeking oral health literacy on social media was the level of trust (β = 0.391), followed by the frequency of seeking oral health information (β = 0.369) and behavior in maintaining oral health (β = 0.283).

DISCUSSION

This study is a follow-up to the previous investigation titled Overview of Awareness and Satisfaction of Jambi University Medical Students towards the Use of Social Media as an Oral Health Literacy Platform.[17] The relationships between the variables were explored using multiple linear regression analysis. The findings implied that the influence of social media on individual awareness was stronger when there was a high level of trust in the content and active, independent seeking of health information. Furthermore, established awareness strengthens the positive impact of social media in shaping healthy habits, particularly in the context of dental and oral health.

The multiple linear regression model employed in this investigation demonstrated exceptional statistical robustness and considerable explanatory power, confirming a profound and statistically significant influence of the independent variables on the dependent variable. This rigorous analytical outcome critically indicated that the cultivation of oral health literacy awareness through social media engagement is not merely incidental but rather is systematically driven by the frequency with which individuals proactively seek information [20], the crucial level of trust they place in the veracity of online health content [21], and the tangible extent to which this knowledge is integrated and implemented into their daily health practices.[22] These findings collectively underscore the intricate interplay of cognitive and behavioral factors in shaping public health outcomes in the digital age.

Consequently, the level of trust placed in oral health information and content shared on social media emerges as a pivotal determinant influencing the active pursuit of oral health literacy among medical students at the Faculty of Medicine and Health Sciences, Jambi University.[23] This finding suggests that a foundational belief in the credibility and relevance of digital health narratives profoundly shapes their engagement. More broadly, the empirical evidence from this study indicated that the frequency of seeking oral health information, the inherent level of trust, and proactive oral health maintenance behaviors collectively exert a positive and significant influence on fostering awareness of oral health literacy through social media platforms. [24] These compelling results lend substantial credence to the idea that social media plays an indispensable role in shaping individual health awareness and subsequent behavioral patterns, especially within user cohorts who exhibit a high degree of confidence in the information encountered and are intrinsically motivated to seek pertinent oral health insights.[25]

The observed association between the frequency of seeking oral health information on social media and increased literacy awareness has been reported consistently across recent oral health communication research,[1,26,22] with higher engagement linked to improved comprehension of preventive practices and, in several studies, measurable gains in clinical indices such as plaque and gingival scores.[1] This phenomenon is not merely a passive reception of data. Qualitative evidence from practicing dentists suggests that social media functions as an interactive channel that actively facilitates information accessibility and promotes oral health knowledge among diverse populations.[22] Rather, it suggests an active engagement by individuals in curating their health knowledge. Social media platforms, by their inherent architecture, facilitate rapid dissemination and access to a vast, often dynamic, repository of health-related content, thereby offering a breadth and immediacy of information that traditional channels may lack. This accessibility is crucial for fostering an informed population, as it empowers individuals to proactively seek and assimilate current best practices in oral

hygiene. However, this efficacy is inherently contingent upon the quality and veracity of the information encountered.

The dual nature of social media as both a potent educational tool and a conduit for misinformation presents a significant challenge to health literacy, a tension repeatedly identified in oral health-specific reviews. [22,27] While a high frequency of information searches demonstrably correlates with heightened public awareness and understanding of oral health's importance, leading to more proactive preventive behaviours,[1,26] this relationship is critically mediated by the individual's ability to appraise sources and discern credible information from spurious claims, particularly because a considerable share of circulating dental content on platforms such as YouTube has been found to be commercially biased or scientifically unsubstantiated.[27,28] This pattern mirrors the broader health misinformation literature, where unregulated information ecosystems and low digital health literacy have been shown to undermine accurate understanding unless users possess adequate source-evaluation skills.[29-31]

This finding underscores the need for robust digital health literacy initiatives that equip individuals with the skills to navigate complex online health landscapes, thereby maximizing the positive impact of social media engagement on public health outcomes, as extensively discussed in contemporary health communication literature on the "infodemic" phenomenon. Studies have shown that using social media as a source of health information allows individuals to gain broader and more up-to-date knowledge about proper oral health practices, thereby contributing to increased awareness of maintaining oral health.[12,32] In addition, social media can also be an effective means of disseminating health education, although challenges such as inaccurate information need to be addressed to maintain the quality of health literacy obtained.[22] A high frequency of information searches on social media is positively correlated with the level of public awareness and understanding of the importance of oral health, which can ultimately encourage better preventive behavior.[16]

Beyond mere exposure, the level of trust emerges as a paramount determinant in shaping individual awareness, particularly within the complex interplay between social media influence on cultural identity and health decision-making. Trust is not simply an additive factor but serves as an important psychological and sociological foundation upon which information reception, processing, and internalization are built. Without a foundational level of trust in the source or the content, information, regardless of its accuracy, is likely to be discounted or rejected, failing to penetrate an individual's existing cognitive framework. This aligns with established theories of persuasion and social influence, which posit that source credibility is a critical precursor to attitude and behavior change. For instance, the findings of Radwan et al [33] in Egypt, illustrating social media's significant influence on the cultural identity shifts within rural communities, provide a compelling parallel.

Their work demonstrated that the adoption or rejection of new cultural values was closely linked to the perceived trustworthiness of both social media platforms and the information presented on them. While their study focused on cultural identity, the underlying mechanism of trust as a primary filter for information adoption is directly transferable to the domain of health information seeking. This suggests that trust not only directly influences awareness but also affects the overall effectiveness of health communication strategies and social interactions in fostering both individual and collective health literacy. Therefore, understanding the antecedents and dynamics of trust in digital health environments is crucial for designing interventions that genuinely resonate with and impact target populations.

The intricate relationship between oral health behavior and the propensity of medical students to seek health literacy on social media is a critical area of inquiry. Our findings indicated a direct correlation between the utilization of social media for oral health information and diligent tooth-brushing practices. This

observation aligns with previous research suggesting that individuals already engaged in positive health behaviors are often more proactive in seeking complementary information, thereby reinforcing their existing habits rather than initiating new ones. Conversely, an intriguing inverse relationship emerged between social media-based oral health information seeking and regular dental visits. This phenomenon, which resonates with the insights from Maharani et al,[18] suggests that direct professional consultation during dental appointments often satisfies immediate information needs, consequently diminishing the perceived necessity for supplementary online searches.

This dynamic highlights a potential divergence in information acquisition pathways based on the immediacy and authority of the source. Furthermore, the findings of a comparative study conducted in China demonstrated superior oral health literacy and behaviors among medical students compared to their non-medical counterparts. While our research focused on information seeking rather than direct comparisons between student groups, the established role of oral health literacy as a partial mediator between academic background and health behaviors underscores the broader significance of enhancing literacy to foster better practices, a principle that our findings implicitly support within the digital information landscape. [34]

The theoretical underpinnings for understanding information-seeking behavior on social media are well-established, notably through the Technology Acceptance Model (TAM). Our investigation reinforces the core tenets of TAM, demonstrating that the perceived usefulness and ease of use of social media significantly influence the frequency with which individuals, particularly medical students, seek oral health information. This supports the applicability of TAM in the context of health literacy by highlighting how beliefs about improved knowledge and performance translate into greater behavioral intentions and subsequent active engagement with social media platforms. Moreover, the transition from behavioral intention to actual use, fostering trust and better oral health behaviors, is also supported by our findings, which are consistent with the model's predictive framework.

This framework is further enriched by considering factors such as digital literacy and the intention to socialize, which, as our findings suggest, can enhance the effectiveness of information seeking and facilitate behavioral change. Complementing TAM, the Information System Success Model (ISSM) posits that information and system quality are key drivers of behavioral intention and actual social media usage. Our findings, consistent with prior research [35,36], underscore the critical role of high-quality, relevant, and reliable information in enhancing student satisfaction and positively impacting oral health behaviors. This study therefore not only confirms the validity of these established models but also expands their practical implications within the specialized domain of oral health education for medical students.

The deliberate selection of medical students as the subjects of this study was based on their pivotal role as future healthcare providers, particularly in Indonesia's 3T (underdeveloped, frontier, and outermost) regions, where dental professionals are scarce. This choice is consistent with the growing recognition in public health literature of the expanded responsibilities of non-dental medical personnel in delivering essential promotion and preventive oral health services. Our study thus expands on this understanding by exploring how these future professionals can leverage digital platforms for information acquisition, thereby enhancing their capacity to serve underserved communities.

Social media, widely recognized in various studies for its convenience and broad reach in disseminating health information, emerges as a particularly effective platform for accessing oral health knowledge, offering accessibility regardless of geographical constraints. Our findings support the potential of social media in this context but also highlight a critical infrastructural challenge: the need for robust government policies to ensure adequate internet access in remote

areas, without which the full potential of social media for health literacy cannot be realized. This policy implication provides an important direction for future interventions and builds upon existing knowledge regarding digital health disparities.

Recognizing the inherent susceptibility to selection bias in this type of research, our methodology incorporated several deliberate strategies to uphold the integrity and impartiality of the findings. To begin, field coordinators were selected through a randomized process, ensuring an equitable distribution of responsibilities and minimizing potential influences on data collection. Furthermore, data entry was standardized using Google Forms, which not only streamlined the process but also facilitated a consistent and less intrusive approach to data collection. A rigorous, multi-stage verification process was subsequently implemented by the research team, involving repeated cross-checks to ensure the accuracy and reliability of the submitted data. Crucially, respondents participated without divulging personal identifiers, a measure specifically designed to preclude potential biases and mitigate any conflicts of interest, thereby fostering an environment of genuine and unbiased participation.

The two-stage questionnaire distribution limited the optimal assessment of instrument validity and reliability. Consequently, the results should be interpreted with caution, particularly in terms of measurement consistency and generalizability. Furthermore, the sample size was unbalanced across cohorts, making it difficult to generalize the findings to the broader population. The limited availability of previous studies examining awareness among general medical students also made it difficult to identify comparable findings.

Although this study has provided significant insights into the determinants of awareness among medical students at Jambi University in seeking oral health literacy on social media, several limitations should be acknowledged. A comparative study involving non-medical students is lacking, which could provide a broader perspective on differences in awareness levels and the factors influencing awareness across populations with different academic backgrounds. Therefore, future studies are strongly recommended to include comparisons between these two student groups. Given the lack of a direct intervention, further studies should also focus on developing and evaluating interventions designed to improve oral health literacy through social media content, thereby providing more concrete, practical recommendations for educational institutions and health policymakers.

CONCLUSION

The frequency of seeking oral health information on social media, the level of trust, and oral health behaviors made significant and positive contributions to awareness levels. The model developed in this study demonstrated an excellent ability to explain variations in awareness, confirming the central role of these three determinants in shaping oral health literacy on digital platforms. The level of trust in the information accessed was the strongest predictor of student awareness, followed by the frequency of seeking information and the extent to which oral health behaviors were practiced. These results confirm that medical students' awareness was influenced not only by the frequency of seeking information but also by their belief in the validity and relevance of the content, as well as their commitment to applying it.

The implication of this research is that it provides evidence that medical students already possess awareness of dental and oral health literacy accessed through social media. These findings provide guidance for the government, dentists, academics, and other stakeholders by demonstrating that the trustworthiness and quality of health-related content are key factors. Therefore, relevant and credible references are needed when developing content to reduce the spread of misinformation (hoaxes).

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