

Digital Health Literacy in TikTok: Algorithmic Competency, Multi-Source Verification, and Uses-Gratification Among Islamic University Students

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Abstract: Social media's increasing volume of health information provides opportunities for knowledge dissemination but also increases exposure to misinformation and disinformation. This study is framed by digital health literacy (DHL) as the primary analytical lens, and uses and gratifications theory as a complementary lens to understand the students' reasons for seeking, selecting, and using health information on social media. It reviews the way of students of different faculties and study programs at UIN Sultan Syarif Kasim Riau conduct search and verification of health information. This is a descriptive qualitative study, which was carried out in April 2026. Data were collected through in-depth interviews and focus group discussions which is analyzed thematically using the Miles, Huberman and Saldaña model. The results imply that TikTok is the primary platform for health information seeking, which is attributed to its engaging audiovisual format and students' algorithmic competency in responding to algorithm-driven content. Multi-source verification practices also vary depending on academic background, with students citing scholarly articles, personal experience, peer opinions, and checking influencer credibility. Entertainment-driven media use generally tended to result in situational health information seeking. Students were generally better at recognizing misinformation than correcting it publicly, pointing to the need for DHL education in university curricula.

Keywords: Algorithmic Competence, Digital Health Literacy, Multi-Source Verification, Uses and Gratification

Introduction

As platforms like TikTok become major sources of health information for university students, digital health literacy (DHL) is emerging as a crucial competence in algorithmically mediated information ecosystems. Indonesia consistently ranks alongside the United States among the top countries in the world in terms of the number of TikTok users. TikTok also has the most users, which means daily engagement. Gen Z adults are the most active, spending up to 76 minutes on TikTok daily (Shewale, 2026). Nearly half of health-related videos on contain misleading or non-factual information and most of that content comes from non-medical influencers (The University of Chicago, 2024). TikTok's For You Page (FYP) algorithm has power over which health information TikTok users see. This is not incidental. Recommendation algorithms have been identified as a driver of misinformation amplification across digital platforms (Fernandez et al., 2024). Recommender systems sit in a place being both a problem and a potential solution, to online health misinformation (Fernandez & Bellogín, 2020). Unlike the traditional health literacy models that emphasize individual cognitive capacities (Norman & Skinner, 2006), DHL also consists of the navigation of recommendation algorithms, the evaluation of credibility of creators and the triangulation of multimodal sources in environments with limited attention (Norgaard et al., 2015; Vaart & Drossaert, 2017).



Applying the digital health literacy (DHL) concept to algorithmically curated sites reveals significant gaps. The eHEALS model (Norman & Skinner, 2006) presumes that users traverse a linear path to seek information and does not take TikTok's feed presentation of content which is quite different from the "search-and-retrieve" Web 1.0 model as a clear example of passive algorithmic consumption (Wang et al., 2026). Another qualitative conclusion was the ability to reduce the diversity of health information exposure by algorithm suggestions combined with inducing passive information seeking among young users (Cingi & Iqbal, 2026). In contrast Norgaard et al. (2015) presents a 7-domain e-health literacy paradigm that includes person skills and system features, providing a more holistic basis for understanding digital health participation, compared to the previously described models. A recent study by Merga (2025) on TikTok and Digital Health Literacy (DHL) reported that a user's demographic background and environment strongly influence their ability to access, interpret and verify health information online. Besides, studies in Indonesia also show that the health hoaxes are the highest after political hoaxes (Asri et al., 2025). This requires strong digital health literacy skills to be able to assess online health information critically. A validated Indonesian version of the eHealth Literacy Scale (I-eHEALS) demonstrated outstanding reliability (Cronbach's $\alpha = 0.91$), in which the respondents had relatively less trust in applying online health information to real health decisions (Wijaya & Kloping, 2021). Together, these models indicate that DHL is not a fixed, transferable ability but one that needs to be reconceptualised for each new information architecture it encounters.

The three dimensions of DHL discussed here have unique theoretical relevance and draw on various, yet converging, bodies of literature. First, algorithmic competence enables users to understand the role of FYP curation in their health information diet (Büchi et al., 2020; Gagrčin et al., 2026), but TikTok's engagement-optimising architecture disproportionately amplifies soft selling, commercial embedding, and emotionally resonant health claims (Tambunan & Efendi, 2026). Beyond the use of the platform, the measurement of this competence includes indicators such as differences in infection rate and misinformation ratio in recommendation-driven amplification (Fernandez et al., 2024), recognition of similarity-based recommendation and awareness of cognitive bias (Fernandez & Bellogín, 2020), levels of passivity in information consumption (Cingi & Iqbal, 2026), accuracy of AI-based detection of misleading content (Liu & Xiao, 2021), and awareness of platform transparency or accountability (Faculty of Public Health, 2024). Algorithmic expertise matters precisely because algorithms have replaced human gatekeepers as the principal curators of health information. The capacity to read, reject, or play with suggestion reasoning is a vital expansion of conventional literacy skills.

Second, the best way to assess quality of health information is to compare information about health from different sources, which is called multi-source verification. Those who can check facts across several websites (Levin-Zamir et al., 2025) can even identify misinformation regarding health. Interestingly, 45% of youth in Indonesia actually get health tips from social media instead of consulting a doctor (Gordon, 2022; Adha et al., 2025).



Many college students are unable to differentiate between trustworthy and doubtful health information sources (KHademian et al., 2020), so there is a need for good ways to check facts to bridge the gap between what looks reliable and what's truly accurate. People with digital health literacy (DHL) are much better, at finding reliable online health information. These people evaluate and apply information as well (Zhao et al., 2024). The measurement indicators for this dimension are accuracy in identifying credible versus non-credible sources (KHademian et al., 2020) frequency of consulting institutional sources versus social media reliance (Vrdelja et al., 2021); extent of exposure to disconfirming narratives as a corrective verification strategy (Fernandez et al., 2024); and effectiveness of popularity-based, collaborative and content-based filtering in limiting exposure to false content (Jakobsen et al., 2025). However little attention has been given to the use of discipline-specific verification structures by students from platform-specific contexts. This study fills a gap. This study fills a gap.

Third, UGT explains how people take in health information through the gratifications of searching for information seeking entertainment receiving decision support and communicating. These gratifications create ways that people interact on social media (Whiting & Williams, 2013; Xiao et al., 2022). UGT is relevant to health literacy because UGT can tell the difference between the gratifications that people want and the gratifications that people actually receive. Guidance, socializing, mood management and habitual diversion predict how people look for health information (Wang & Chen, 2022). In Indonesia studies have shown that seeing social media content greatly affects students' health literacy levels (Ali, 2024; Madani et al., 2025). When crises happen, using UGT shows that followers of health education accounts mainly follow these accounts to satisfy their information needs (Maulida, 2026).

Related to support from health-related social media use (Kim, 2016) motivation profile in the family health domain (Olpin et al., 2023) and gratification pattern among the older adult population for health content on WeChat (Zhang et al., 2021). Algorithmic serendipity becomes public health education (Paige et al., 2017). The accidental acquisition of health information while scrolling through entertainment content raises a question for the UGT assumption of intentionality. This suggests that gratification may be algorithmically mediated than merely user-driven. Crucially the UGT assumption of intentionality is challenged by the acquisition of health information when scrolling through entertainment content; algorithmic serendipity acts as ambient public health education (Paige et al., 2017). This indicates that gratification itself might be algorithmically mediated than simply user-driven.

These three variables are not ideas but the linked steps of the digital health literacy process. Algorithmic competence describes how non-human systems search and curate health information (Fernandez et al., 2024). Multi-source verification describes how the credibility of that health information is checked through triangulation (KHademian et al., 2020). UGT describes why people choose to engage with that health information and why they keep doing (Wang & Chen, 2022; Maulida, 2026). Digital health literacy only looks at competence but it misses the systemic algorithmic mechanisms and the psychological motivations behind health information behavior on social media. These processes must be studied at an Islamic university



where cultural discipline meets the algorithmic features of TikTok. In a global survey of doctors 23 percent of doctors said they would support a full ban on TikTok because of the spread of health misinformation that threatens patient safety (Sermo, 2025). However the platform itself is a place for health communication. The Ministry of Health of Indonesia and the #InfoKesehatan initiative, from Halodoc-TikTok were actively involved with reaching millions of users (Halodoc, 2022). The contradiction between the risk of misinformation and the potential for health communication renders DHL a critical research subject among Islamic university students. Disciplinary training can shape content preference, basic algorithmic stance, verification technique, and gratification orientation. This study covers the gap through qualitative inquiry among twelve students from seven study programs at UIN Sultan Syarif Kasim Riau. Research questions: (1) What is the effect of students' disciplinary backgrounds on their algorithmic competency in curating TikTok health content? (2) What multi-source verification strategies do students apply when evaluating the credibility of health information on TikTok? (3) What are the uses-gratification patterns that encourage students with diverse disciplinary orientations to accept health information?

Today, digital health literacy is a necessary competency within global information ecosystems. Traditional models of health literacy, for instance, the eHEALS framework, have traditionally focused on the individual cognitive capacities and assumed a linear pathway of searching and retrieving information (Norman & Skinner, 2006).). But this paradigm is getting less and less compatible with new digital infrastructures. Currently, digital health literacy is conceived as the ability to maneuver recommendation algorithms, evaluate the credibility of content creators, and triangulate multimodal sources in environments of limited attention (Norgaard et al., 2015; van der Vaart & Drossaert, 2017). Yet, a review of the literature suggests that the public's ability to locate and critically evaluate health information online is heavily conditioned by their demographic and geographical location (Merga, 2025). Digital health literacy is, therefore, not a static skill but one that needs to be rethought with each new algorithmic architecture it is presented with. The eHealth Literacy Scale includes a validated Indonesian version, which produced great dependability, although the respondents had quite low confidence in using online health information for real health decisions (Wijaya & Kloping, 2021). The fragility of the Indonesian digital ecosystem makes the task hard. The unpleasant circumstance means that the Indonesian people need to have digital health knowledge so they can check all the health information they read on the internet. The significance of recommendation systems in the social media realm as entities that propagate misleading information and prospective means to teach health issues is tougher to assess. In this paper, three components of the health knowledge process are considered to explain the user interaction on these platforms. First, algorithmic skills are about understanding how automated systems choose and show health information so that people are aware of how algorithms influence what they see online (Büchi et al., 2020). Second, digital health literacy involves cross-referencing information from many credible sources in an effort to reduce the danger of misinformation (Vrdelja et al., 2021). Third, the Uses and Gratifications theory analyzes the motivations of participation. In the current world of social media where individuals scroll for leisure, they



often come across health information. This modifies the typical concept of people's internet usage and develops a sort of background health education (Paige et al., 2017).

According to DataReportal, United Nations demographic data shows that 11.0% of the population is, in the 18-24 age group. This age group therefore represents the majority of young adult internet and social media users (Kemp, 2025). For example, some of U.S. Gen Zs believed health claims of social media influencer (Gordon, 2022). However, literature states that Gen Z are very reliant on social media and have more trust in the internet than conventional healthcare providers in a broader sense but their health decision making is complex and involves family members rather than just influencers (Cecconi et al., 2025). Indonesian Gen Z has been found to frequently access health information through social media and be vulnerable to influencer messages (Adha et al., 2025) but most trust health professionals more than influencers which means the young adult group is more susceptible to health misinformation. International health organizations have therefore started to work with content providers to address this issue (WHO, 2024). But TikTok is also a platform for health communication. Many bright initiatives and interesting activities on TikTok, such as Halodoc TikTok campaign that got millions of views in 2022. The efforts prove that the platform can be used not only as an entertainment medium, but also as a medium of health awareness and communication among its users (Halodoc, 2022). Therefore, TikTok is an important platform for dissemination of important health information.

The underlying tension between the risk of misinformation and the possibility of health communication makes digital health literacy an essential research goal in certain academic institutions, such as UIN Sultan Syarif Kasim Riau. More specifically, the study examines the impact of students' disciplinary backgrounds on their algorithmic competence in social media, particularly TikTok; their curation of health content; the multi-source verification strategies used to assess the credibility of TikTok health information; and the uses and gratifications patterns that drive health information adoption among students with different disciplinary orientations. This study intends to fill these gaps by qualitatively exploring twelve students of UIN Sultan Syarif Kasim Riau from seven study programs. Research questions are (1) What is the effect of students' disciplinary background on their algorithmic competency in curating health content on social media? (2) What multi-source verification procedures do students use to judge the credibility of health information on social media? (3) What are the uses-gratification patterns of health information uptake among students with different disciplinary orientations?

Methods

This study used a qualitative descriptive design. This design was chosen because it allows the study to capture students' experiences, meanings, and reasoning in a natural and detailed way, which is difficult to measure through quantitative instruments alone (Nugrahani, 2022; Tambunan & Efendi, 2026). Research suggests that TikTok provides an environment for studying how users encounter and judge the credibility of health information, largely due to features like multimodal videos and algorithm-driven content exposure (Merga, 2025). These characteristics align with current digital health literacy frameworks focusing on skills such as



searching for, evaluating, and using online health information (van der Vaart et al., 2026; van der Vaart & Drossaert, 2017). Algifari et al., (2024) also provided literature explores digital health literacy within the Indonesian context and provides background insights into regional digital health environments. To investigate this dynamically, this study included twelve students from UIN Sultan Syarif Kasim Riau, selected using a purposeful sampling approach, a well-established qualitative methodology designed to capture diverse perspectives and experiences (Palinkas et al., 2015). The selection criteria specifically required active TikTok use, recent experience searching for health information on social media, and representation across academic years, reflecting the broader phenomenon of youth reliance on social media platforms for health-related content.

Source verification was observed across all twelve participants, though the depth and nature of the evidence varied depending on the students' academic backgrounds. Students applied distinct strategies, for example, Nutrition Study students frequently triangulated Google search data with video content, whereas Islamic Economics students demonstrated a more reflective processing style before accepting health claims. Extending this behavioral analysis through a uses-and-gratifications (UGT) framework reveals three distinct motivational dimensions driving students' engagement with health information: academic motivation, where students actively sought health facts to support formal coursework; relaxation motivation, where incidental exposure to health videos during casual scrolling occasionally prompted spontaneous habit modifications; and preventive motivation, where personal or family health challenges inspired sustained, long-term lifestyle adaptations. Data were collected through four in-depth interviews and three focus group discussions (FGDs) conducted between April 7 and 23, 2026. Participant demographics are presented in Table 1.

Table 1
List of Informants

No	Code	Gender	Study Program	Data Collection
1	Informant-1	Female	Qur'anic Studies	In-depth Interview
2	Informant-2	Male	Science Education	In-depth Interview
3	Informant-3	Female	Public Administration	In-depth Interview
4	Informant-4	Female	Islamic Guidance and Counseling	In-depth Interview
5	FGD1-01	Female	Islamic Economics	FGD 1
6	FGD1-02	Female	Islamic Economics	FGD 1
7	FGD1-03	Female	Islamic Economics	FGD 1
8	FGD2-01	Female	Nutrition Study	FGD 2
9	FGD2-02	Male	Nutrition Study	FGD 2
10	FGD3-01	Female	Communication Science	FGD 3
11	FGD3-02	Female	Communication Science	FGD 3
12	FGD3-03	Female	Communication Science	FGD 3

Source: Primary Research Data, 2026



Data were collected between April 7 and 23, 2026, through four in-depth semi-structured interviews and three focus group discussions, each involving 2-3 participants. The interviews focused on participants' experiences in searching for health information, their motivations for using social media, their ways of judging credibility, their verification strategies, and the influence of peers, family, and online communities. The FGDs were used to explore shared meanings, disciplinary differences, and collective reflections on health information practices. All sessions were conducted face-to-face, recorded with consent, and followed by member checking to improve interpretive validity (Creswell & Poth, 2018).

Data were analyzed thematically using the Miles et al. (2020), model through three stages: data condensation, data display, and drawing and verifying conclusions. Interview and FGD transcripts were read repeatedly, coded, and organized into categories related to digital health literacy, such as information needs, credibility assessment, verification behavior, algorithmic exposure, and the influence of social networks. The coded data were then arranged into thematic matrices to identify recurring patterns and disciplinary contrasts across participants. In the final stage, the findings were interpreted and refined through iterative comparison across the full dataset, producing three overarching themes: algorithmic competence, multi-source verification, and uses-and-gratifications patterns. Trustworthiness was strengthened through methodological triangulation, peer debriefing, rich descriptive quotations, audit trail documentation, reflexive journaling, and forward-backward bilingual translation of Indonesian transcripts. Informed consent and pseudonym protection were applied throughout the research process.

Results and Discussion

Three key themes emerged from thematic analysis such algorithmic competence in navigating social media's health information ecosystem, multi-source verification practices, and uses-gratification patterns driving health information adoption.

Algorithmic Competence

Algorithmic competence should be seen as an intrinsic and dynamic dimension of DHL, one that naturally connects users' technological skills with their vital capacity to navigate online health information. Rather than reiterating previous literature that often presents TikTok as the dominant, universal, and largely uncontested source of health information for youth, this study shows that the exercise of algorithmic competence in DHL is highly context-dependent and unevenly embraced. This is more in line with Roth et al. (2021). Participants' comprehension of the role of social media algorithms in curating health-related information varied greatly, with disciplinary background being more influential than a common level of digital proficiency. Therefore, our study shows that algorithmic competence is not just the ability to use a platform, but also the ability to understand, counter, or strategically engage with its recommendation logic in a manner that corresponds to users' academic training and information needs.

The most explicit engagement with the discipline-specific content was seen among Communication Science students (FGD3), showing the most analytically explicit algorithmic



competencies. They can deconstruct soft-selling and comment section manipulation, which clearly correlates with communication theory's focus on message analysis and critical decoding (McQuail & Deuze, 2020). FGD3-03 acknowledged the shift of persuasive techniques to more implicit narrative blending, *"Now soft-selling is difficult to distinguish, someone makes a video of their work desk, then the product is in the background, but not mentioned, then in the comment section people ask, is this real or an ad? It's not coming from the official account of the brand, but from an employee or someone associated with the brand."*

Their discoveries take classic advertising critique into a platform-native environment where interaction patterns build influence. For example, FGD3-02 described how comment dynamics are algorithmic cues for consumption, *"A lot of contents about PCOS appears from netizens' comments saying fried food is unhealthy, not from specific influencers or doctors, but from netizens' comments that make me keep reading. Someone says something and then another follows. Finally, I read on too."* PCOS is referred to Polycystic Ovary Syndrome, PCOS is a complex, chronic hormonal disorder affecting women of reproductive age. FGD3-01 also identified fabricated patterns in viral material, *"If the comments are all like a template, all using the same words, it is likely a buzzer from the endorser."*

By contrast, students from the Nutrition Study (FGD2) demonstrated an applied kind of algorithmic literacy that focused on intentional environmental curation, rather than deconstruction of messages, to proactively counter filter bubble effects (Xu et al., 2019). They purposely designed the algorithm to track proven nutrition researchers, practicing dietitians, and institutional health sources to build a knowledge-supportive atmosphere, changing an entertainment infrastructure into a professional learning infrastructure. *"There is also a TikToker who makes anti-hoax content that comes up organically,"* added one participant. FGD2-01 also mentioned the more sophisticated pattern recognition that was a result of the habits of using the platform, *"I have learned to recognize the pattern of endorsement content because I often open TikTok."* Algorithmic competency in this group was less about detecting fraud in each and every post, and more about influencing the platform so that authentic health information could bubble up to the surface with minimum searching, and provide ambient validation of their classroom knowledge.

On the other hand, students of Islamic Economics (FGD1) and certain in-depth interview participants showed a more instrumental, pragmatic, and normalized attitude towards algorithmic systems. FGD1 ran the algorithm in a goal-driven way, using TikTok's cascade suggestion logic to keep people engaged. *"If you click one, another will pop up, and eventually you get more content."* explained FGD1-03. FGD1-02 discovered a platform-specific heuristic based on visible engagement metrics, *"After searching, the most liked one is the first one I watch. It's up there."*

Similarly, Informant-4 of Islamic Guidance and Counseling described the algorithm as ambient media that has successfully replaced traditional broadcast television, *"Social media is like taking a break from studying, the content comes by itself, keeps updating, and has become a daily habit. Now social media is like television."* This is an example of a normalizing of



algorithmic exposure in which the platform feeds content rather than the material being actively sought out.

Lastly, Informant-1 (Qur'anic Studies) offered a theoretically critical divergence that contests platform-centric digital health literacy models that assume universal interaction with web-based health information (Paige et al., 2017). Her extensive disciplinary background produced significant textual interpretive habits that valued reading over short form video consumption and she actively rejected TikTok for health information. *"I have had an X account for a long time," she said. "I prefer reading over watching videos. I shop more on TikTok, not for health advice."* This particular finding situates digital health literacy beyond technology use and into the depths of discipline reading cultures and epistemic preferences. It shows that algorithmic competency also includes the important decision of whether to stay within a particular platform ecosystem at all.

Overall, these findings confirm that digital health literacy, and the algorithmic competence within it, is a negotiated activity. It is also not a monolithic condition or a fixed ability associated with age group or frequency of platform use but rather a dynamic emergent quality that results from the interaction of the user's disciplinary training, the platform's affordances and their personal epistemic preferences.

Multi-Source Verification

Within the larger ecosystem of Digital Health Literacy (DHL), the ability to assess and verify information is a vital component of healthy online behavior. It is not just the receiving of information that tests the literacy of social media users, it is also the validation of information when presented with health claims on unregulated social media platforms. A consistent pattern of multi-source verification was evident across all twelve participants in this study (conceptually described as multi-layered verification to reflect the cumulative processes undertaken by individuals). This pattern is the most important positive finding of the study for DHL capacity. All participants, regardless of discipline background, reported participating in some type of cross-platform or multi-source verification before adopting health information found on social media. This universal behavior constitutes what we might call an epistemic vigilance (Sperber et al., 2010), with disciplinary backgrounds giving rise to different but fundamentally parallel verification structures.

This tripartite architecture is a direct equivalent to the subscale of DHL measuring dependability as defined by Bak et al. (2022) as the capacity to verify multiple websites for consistency of content, detect commercial bias, and determine the reliability of the source. These are the skills that all groups of participants naturally showed without formal instruction on DHL. Importantly, unlike the ICILS study showing that only 1% of Danish eighth-graders could select relevant information and assess its reliability in 2023, these critical skills face even greater pressure today amid the rapid spread of AI-generated content (Caelli, 2026) and KHademian et al. (2020) who found that less than half of Iranian college students felt confident in differentiating between high and low quality online health sources, the participants in the present study demonstrated active compensatory verification strategies rather than passive



difficulty. This shows how TikTok's design to keep users hooked exposes them to platform-specific disinformation may in fact deepen the multi-source verification technique.

Examining particular disciplinary techniques shows how this vigilance is put to work. The credibility frameworks of the Communication Science students (FGD3) were the most methodically stated and quantitatively precise of all groups. They took their verification to TikTok, websites and even consulted doctors directly. FGD3-03 presented a very clear multi-source quantitative threshold, *"If I want to trust something about health, I need at least five videos with the exact same perspective before I believe it. If the opinions differ, I don't just stick to TikTok; I also read from the web to be more convinced."* This was complemented by FGD3-01 who demonstrated multi-source website credibility assessment by integrating domain analysis, professional credential verification, user comment authenticity and sophisticated price-comparison arbitrage as fraud detection mechanism, *"If it's not a personal blog, it's usually a community or a doctor. If there is a .id domain at the end, I trust it. But if it is a personal blog, I still need at least five sources with the same results before I believe it. I compare prices on the internet and in stores. If it's half the price, it is suspicious if the price doesn't make sense."*

On this basis, FGD3-02 identified product ingredient consistency testing and cross-platform creator analysis, *"I check the product's ingredients. If the ingredients don't make sense or the comments don't match the claims, I don't believe it. I also check consistency; if one day they promote a medicine and the next day they promote something completely unrelated, it's questionable."* Most significantly, all three participants in FGD3 showed the highest level of verification behavior found in this study, i.e., direct medical consultation to verify health claims via social media. As FGD3-01 said, *"When I accompanied my father to the doctor for a check-up, I asked about the things I found on social media, whether this food is allowed to be eaten, what the ingredients are, what the effects are. The doctor confirmed it."*

This direct consultation with physicians is the highest level of epistemic vigilance, using biomedical authority to enact health claims drawn from TikTok. This pattern is consistent with the distributed health literacy theory by Bak et al. (2022), where close social networks are important mediators. Given that 79.2% of sample had never consulted physicians via digital channels, the proactive consultation behavior of FGD3 participants is a particularly high-order multi-source verification technique.

Students in the Nutrition Study (FGD2) adopted a different but equally robust strategy, using a visually anchored verification chain that leveraged platform affordance complementarity. They tapped into TikTok's visual modality to address Google's text-only constraints. FGD2-01 explained this unique dynamic as follows, *"On Google I cannot see their physical appearance. I am afraid of a misdiagnosis. So, I continue on TikTok because we can see the physical condition and the doctor can explain it directly on TikTok."* Scientific reference citation became their major credibility signal, indicating emergent evidence-based competencies normally associated with postgraduate training (Norman & Skinner, 2006), *"If the content includes its references, from WHO, from a journal, along with the year, then we know it is published by a recognized health institution. If there are no references, I am a bit*



skeptical." Moreover, universal credibility anchors such as creator topic consistency (*"As long as the account is consistent in its topic, I trust it, not because of its followers..."*) and emerging concerns about AI-generated content (*"I'm worried that the content might have been generated by AI,"* FGD2-02) were salient in this group, leading to further multi-source verification.

By contrast, Islamic Economics students (FGD1) displayed experience-based validation strategies, engaging in extended periods of discussion and consulting with peers and analyzing real-user comments. FGD1-01 used temporal-deliberative verification with long review, *"I don't just check the account, I check the reviews of people who actually followed the program and provided honest reviews."* FGD1-02 integrated peer networks into their verification routines, *"I ask my friends, 'Have you tried this, is it actually good?' That's part of literacy, digging that deep before making a decision, not being impulsive."* All three FGD1 participants exhibited skillful abilities to detect endorsement and distinguish between genuine everyday product use and commercial promotion by analyzing longitudinal accounts to support their practice of verification from many sources.

Similarly, in-depth interview participants revealed a corresponding sophistication in their multi-source verification chains. The most academically rigorous sequence used by informant-1 was to use AI for conceptual orientation, then text-based platforms, and English-language scientific journals, *"Because AI exists now, I use AI first for a general overview, then I look for the specific medical terms, and then I compare them with journals or articles."* The sequence itself indicates a kind of deep translational literacy between lay discovery and scholarly validation. Structural approaches were also used by other informants; for instance, Informant-4 used logic-first assessment before external sources (*"The first thing I check is whether it is logical or not. Then I ask myself how this could happen. Then I search for it on Google, and I always cross-check with journals."*), Informant-2 using hierarchical medical authority evaluation (*"A lot of things are just assumptions from general practitioners, which are not necessarily the same as what a specialist says"*), and Informant-3 doing novelty-triggered verification (*"I verify on Google especially if the information is something I have rarely heard before"*).

Finally, the documented multi-source verification chains across all participant groups are a very high-order answer to the issues of credibility in the domain of digital health literacy in modernity. Lee et al. (2021) demonstrate that this form of source appraisal and content evaluation are expressly positioned as fundamental Health 2.0 competencies in second-generation eHealth literacy measures. Also, Uses and Gratifications Theory (UGT) by Xiao et al. (2022) found that perceived information quality is a strong predictor of sustained multi-source verification behavior. TikTok has been utilized for a range of public health purposes, but remains poorly engaged by institutional accounts (McCashin & Murphy, 2023). They are actively using multi-source verification to compensate for the lack of an authoritative institutional presence by triangulating data across TikTok, Google, WHO-linked websites, academic journals, and real-world peer or medical consultation networks.

Uses and Gratifications Theory (UGT)



The study is conceptualized through digital health literacy (DHL) as the main analytical lens and uses and gratifications theory (UGT) as a complementary lens to understand the students' motives for searching, choosing and using health information on social media. Three motivational patterns were identified in the data of interviews and focus groups, which were analyzed using a thematic analysis. These patterns shed light on the complex combination of gratifications that drive health information adoption in both disciplinary and personal contexts. The empirical findings are directly supporting and extending the works of Khulwa et al. (2025) who indicate the TikTok use motivations are determined by the needs for entertainment, information seeking, social interaction, personal expression and participation in trends all together. The empirical results confirm and add to the previous studies that the motives of TikTok use among university students in Malang are driven by various needs, especially peeking, social interaction, archiving, escapism, and self-expression (Viabela et al., 2025).

By analyzing these patterns, this research further extends the application of UGT which has been generally inclined to focus mainly on entertainment gratifications.

The first dominant pattern was an academic-cognitive motivation, which anchored the daily information practice of students to peer-reviewed traceability. For instance, students in the Nutrition Study intentionally incorporated health information seeking into their usual academic practice. As FGD2-01 explained, *"Every day we search because there is an assignment that requires us to cite journals, which journal, and what year."* This behavior generated a deep translational literacy, characterized by a fluid transition from social media claims to primary scientific sources. In theory, this practice embeds health literacy into disciplinary enculturation, conceptualizing shared visions as the cognitive dimension of social capital that influences users' attitudes, subjective norms, and intentions to share health information (Jia & Qi, 2024). Communication Science students applied parallel academic methods. They were interested in science communicators like Andrea Navita, whose laboratory experimentation format is built credibility through transparent methodology. FGD3-01 commented, *"He likes to dissect, to prove things. Like marshmallows, spirulina, eucalyptus products, or making plastic from cassava. Communication Science students wouldn't do these experiments themselves."* Likewise, Informant-1 from Qur'anic Studies framed health seeking as an active, in-depth information gain regarding female reproductive health, *"I am not satisfied with just the basics. I want to know the core of it, the medical terminology, and what it is called in the medical world."*

The second and most common motivational theme was relaxation-driven exposure which demonstrates the phenomenon of algorithmic ambient education. In this pattern, social media is used spontaneously for entertainment but serendipitously provides algorithmically persuaded health content resulting in durable behavioral change. Nutrition Study students built strict psychological boundaries to compartmentalize their academic and leisure time, *"We tend to use social media for entertainment. Because if it goes that way, we'll start thinking about assignments. We open social media purely to relax."* Despite this deliberate separation, the platform became an unintentional public health infrastructure. This directly challenges the basic assumption of user intentionality that underpins UGT (Paige et al., 2017). Ambient



delivery produced reproducible behavioral changes. FGD3-02 (Communication Science) experienced permanent food behavioral changes from repeated exposure to appendicitis content, *"Content about appendicitis keeps popping up. So now every time I eat something, I think about the dangers."* Capturing the structural role of this pattern in student affect regulation with phenomenological precision, Informant-4 from Islamic Guidance and Counseling observed, *"Social media is like a smoke break from studying. Instead of taking a smoke break, we scroll through social media."*

The third pattern concerns preventive health motivations that were strongly activated across all groups through personal health experiences, family health histories, and the incorporation of disciplinary knowledge. These motivations generated the strongest behavioral translations in the study. Responding to an ailing father whose physician recommended kombucha, Communication Science students FGD3-01 and FGD3-02 translated their research into verified home practice, *"I look for how to make kombucha, what tea to use, what kind of sugar, where to buy SCOBY (Symbiotic Culture of Bacteria and Yeast)."* FGD3-01 extended this prevention into home remedy experimentation verified through physician consultation, *"Cinnamon and clove decoction can kill germs on teeth and clean oral bacteria. I tried it, it felt clean and fresh."*

Familial risk profiles were equally strong at driving engagement. An Islamic Economics student (FGD1-01) was successful in losing four kilograms of weight due to intergenerational family health risks, while Informant-2 thought about cancer prevention, *"Many family members have died from tumors and cancer, so I try to reduce risk factors like excessive sugar consumption."* Others like Informant-3 expressed independence-driven prevention, *"The motivation is purely for myself, because right now we are studying and living far away from our parents."*

Most importantly, Informant-4 (Islamic Guidance and Counseling) articulated a unique health-oriented living framework that is deeply rooted in the Islamic concept of fitrah, *"Our nature as humans is to live healthy and happy naturally. People who live unhealthy lives usually do so as an outlet for stress."* This culturally located theological gratification dimension that views wellness as an obedience to divinely ordained nature provides the most novel UGT extension in the study. It is in stark contrast to purely biomedical UGT models and is closely aligned with faith-based health behavior frameworks (Lucchetti et al., 2011).

Finally, these findings synthesize algorithmic competence, multi-source verification behaviors and motivational patterns into a discipline-specific Digital Health Literacy model. Platform selection, verification architecture, and gratification priorities change here with the academic enculturation of students. The systematic credibility assessment of Communication Science students, the deliberate platform curation of Nutrition Study students and the Qur'anic Studies informed preference for text-based sources together show that DHL is a situated, discipline-specific competency, not a uniform digital skill. The emergence of two new constructs, translational literacy (fluid movement between lay discovery and academic validation) and fitrah gratification (theologically grounded health motivation integrating Islamic anthropology and UGT), fills important theoretical gaps in TikTok DHL research.



Previous work in this field has been mostly dominated by Western samples (Basch et al., 2022) and generalized applications of continuous engagement (Sharabati et al., 2022).

Theoretical Integration, Implications, and Future Directions

The results of this study integrate algorithmic competence, multi-source verification practices, and motivational patterns into a comprehensive, discipline-specific Digital Health Literacy (DHL) model. Within this frame, the choice of platform, verification architecture and gratification priorities emerge in parallel with students' enculturation into the academic world. The systematic credibility assessment by Communication Science students, the intentional platform curation by Nutrition Study students, and the preference for text-based sources based on Qur'anic Studies demonstrate that DHL is a situated, discipline-specific competency, rather than a generic digital skill. This evidence suggests that digital health literacy in social media environments must be understood not only as an individual capacity to search and evaluate information, but also as a relational competence shaped by platform features, source credibility, and evidence-based health communication practices (Anjelia et al., 2024).

Moreover, these findings actively challenge deficit models of youth DHL by revealing sophisticated practices that often exceed established Western benchmarks. From this integration two novel constructs emerge. The first is translational literacy, the fluidity between lay discovery and academic validation that bridges social media and peer-reviewed sources. The second is fitrah gratification, a health motivation that is based on theology and bridges Islamic anthropology and Uses and Gratifications Theory (UGT). These constructs address some critical theoretical gaps in the literature on TikTok DHL, which has been dominated by Western samples (Basch et al., 2022) and UGT applications that have viewed continuous TikTok engagement mainly through the lens of simple satisfaction (Sharabati et al., 2022). From a pragmatic standpoint, the identification of these constructs has obvious implications for educational and institutional interventions. Translational literacy training on campus has the potential to effectively amplify students' private competencies to wider public health contributions whereas fitrah-framed interventions have great potential for health promotion specifically designed for the Islamic university setting.

In spite of these contributions, the present study admits several limitations. The sample was largely female (10 out of 12 participants) which limits more detailed analysis by gender. In addition, the findings may not be widely generalizable given the single-institution setting and self-reported behaviors may overestimate the sophistication of the users' digital habits. Building on this foundation, future research should employ mixed methods, including platform analytics triangulation, longitudinal behavioral tracking, and comparative multi-institutional designs. These approaches will be key in testing the disciplinary DHL model across gender and institutional settings. Both translational literacy and fitrah gratification are, in theory, worthy of systematic measurement development and rigorous cross-cultural validation.

Conclusion



This study demonstrates that digital health literacy among undergraduate students at UIN Sultan Syarif Kasim Riau operates as a dynamic, multi-dimensional competency shaped by three interrelated practices such as algorithmic competence, multi-source verification, and uses-gratification patterns. Rather than representing uniform digital proficiency, algorithmic competence manifested distinctly across disciplinary backgrounds. Communication Science students exhibited sophisticated detection of soft-selling and comment manipulation strategies, Nutrition Study students employed deliberate For You Page curation toward verified academic sources, while Islamic Economics students navigated through pragmatic like-count heuristics and goal-directed search patterns. All twelve participants showed evidence of source verification, but the depth and nature of the evidence varied based on the students' academic backgrounds. Multi-source verification by crosschecking is a common digital practice, but students took different approaches. e.g. Nutrition The study students were more likely to triangulate Google search data with video content. Students of Islamic economics showed a more reflective processing style before accepting health claims.

The behavioral analysis is further developed by applying a uses-and-gratifications (UGT) framework to identify three different motivational dimensions for students' health-information engagement. Then students, driven by academic motivation, actively searched for health facts to support their formal studies. Second, spontaneous habit changes were sometimes triggered by incidental viewing of health-related videos during casual scrolling, which is termed relaxation motivation. Third, preventive motivation was present where long-term lifestyle changes were sustained because of health problems in the person or family. These insights contradict traditional UGT paradigms that view social media platforms merely as instruments of entertainment. Moreover, while previous research on platforms has shown that apps such as TikTok promote deep user engagement through algorithmic design (Xu et al., 2019) , the findings presented here suggest that students are still participating in active and deliberate information navigation, not passive consumption. Instead of passively consuming algorithmic feeds, students developed a working, critical awareness of platform curation. This fills a gap in recent literature that still lacks explicit algorithmic competencies (Iyamu et al., 2026). They had to actively think about how content is curated in high-engagement settings like TikTok." Standardized self-report instruments, as discussed by Bak et al. (2022)) in relation to the DHLI reliability subscales and by Khademian et al. (2020) regarding the eHealth literacy frameworks, measure perceived competencies. Nevertheless, the qualitative findings suggest that Indonesian university students use context-specific verification methods, which are not captured in traditional survey metrics. Finally, the organic implementation of Health 2.0 skills is not necessarily based on institutional DHL training. We assume that the combination of basic knowledge of the subject and frequent

This study contributes two novel constructs to DHL scholarship such as translational literacy, which is the fluid movement between social media discovery and peer-reviewed validation, and disciplinary algorithmic stance, where academic enculturation shapes fundamental platform navigation orientations. Practically, verification architectures already present among students can serve as pedagogical anchors for structured digital health literacy



curricula within Indonesian Islamic universities. Future research should employ mixed-methods designs and longitudinal tracking to examine how digital literacy-based interventions shape bystander behavior across diverse institutional settings. Such studies should also assess whether positive bystander empowerment can strengthen students' capacity to recognize, respond to, and prevent harmful online behaviors, thereby contributing to a safer and more empathetic digital culture.

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