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# Analysis of Framing and Credibility of Health Messages in Short Video Content (Tiktok, Instagram Reels, Youtube Shorts) and its Implications for Urban Adolescents' Health Literacy

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**ABSTRACT**

*Short-form videos on TikTok, Instagram Reels, and YouTube Shorts have become important sources of health information for adolescents. Although rapid dissemination, visual design, emotional storytelling, and popularity metrics increase message appeal, they do not always ensure accuracy or credibility. This study aimed to analyze framing characteristics and credibility of health messages in short-form videos and examine their relationship with health literacy among urban adolescents. An analytical cross-sectional design was conducted using a content audit and survey involving 384 adolescents aged 15–18 years from urban secondary schools. The content audit assessed 180 health videos based on platform, creator, evidence use, framing type, and misinformation. Health literacy was measured on a 0–100 scale, while framing and credibility were assessed using 1–5 Likert scales. Data were analyzed using descriptive statistics, Pearson correlation, and multiple linear regression. Mean framing and credibility scores were 3.60 ± 0.33 and 3.39 ± 0.41, respectively, while mean health literacy was 84.1 ± 7.3. Credibility ($r = 0.36$) and framing ($r = 0.19$) correlated positively with health literacy. Regression explained 23.0% of variance, with credibility as the strongest predictor ($\beta = 0.35$). Additionally, 45.0% of videos lacked references and 29.0% contained misinformation. Clear framing and credible sources are essential for strengthening adolescent health literacy.*

***Keywords :*** *Health Promotion, Short Videos, Tiktok, Instagram Reels, Youtube Shorts, Credibility, Framing, Health Literacy, Adolescents*

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## INTRODUCTION

Health literacy is no longer limited to the ability to read information from brochures or understand instructions from healthcare professionals. The World Health Organization defines health literacy as the ability to access, understand, appraise, and use health information and services to maintain and improve health. This concept also emphasizes the ability to think critically and interact with the social environment that influences health decisions (WHO, 2022; WHO, 2026). In a digital context, these skills have become increasingly important, as adolescents receive information not only through formal institutions but also via social networks, recommendation engines, content creators, and online communities.

This shift in the information landscape is highly relevant to Indonesia. APJII reported that the number of internet users in Indonesia reached approximately 221.6 million in 2024, representing a penetration rate of 79.5%, while BPS reported that 72.78% of the Indonesian population had accessed the internet in 2024. Although the discrepancy between these figures stems from differences in survey design and definitions, both indicate high digital penetration. BPS data also reveals that mobile phone-based internet access is dominant; consequently, short-form health information in a vertical format holds significant potential for reaching younger demographics (APJII, 2024; BPS, 2025).

Short-form videos possess communication characteristics that differ from those of conventional health articles. Messages are conveyed through a combination of on-screen text, audio, music, facial expressions, demonstrations, and storytelling within a limited timeframe. Studies on short-form medical media indicate that the quality of health content on platforms such as TikTok, Instagram Reels, and YouTube Shorts varies widely, with content created by medical professionals tending to achieve higher quality scores than content produced by non-specialists (Thang et al., 2023). Meanwhile, systematic reviews regarding the persuasive impact of short-form videos suggest that format characteristics, narrative styles, and persuasive elements can influence audience attitudes, beliefs, and behavioral intentions (JMIR, 2023).

The problem is, credibility doesn't always equate to popularity. A review of the reliability of health information on YouTube showed that content quality is generally moderate to low, and popularity metrics such as views and likes cannot be considered indicators of quality (Allgaier et al., 2022). For adolescents, trust in health information on social media is a complex construct. Adolescents consider the content creator, the experiences of other users, the presentation and tone of the information, the availability of evidence, and indications of source verification (Freeman et al., 2023).

The phenomenon of health influencers reinforces the need to assess credibility. A scoping review by Engel et al. (2024) found that influencers can provide access to health information that is relevant to adolescents' lives, but they can also carry risks such as promoting unhealthy products, unrealistic body image, inaccurate diagnostic or therapeutic advice, and commercial conflicts of interest. However, a correlational study of 509 adolescents showed that using influencers as a source of healthy lifestyle information was actually correlated with better health and food literacy, so the

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relationship between social media use and health literacy cannot be simply concluded as negative (Sercu, 2024).

At the individual level, the ability to assess the source and content of information is an important factor. Taba et al. (2022) showed that adolescents can have high self-confidence in seeking digital health information, but their actual ability to assess information quality is not necessarily as high as this perception. This finding is important because short videos are often passively received through algorithms, rather than consciously sought out. Another study of misinformation exposure on TikTok also showed that adolescents and parents both recognize the existence of hoaxes, but the evaluation strategies used are not always adequate (Feijoo et al., 2023).

In the context of health promotion, this situation raises a strategic question: are health messages framed in an engaging and credible manner truly related to adolescent health literacy, and what are the most important factors? This study focuses on three short video platforms widely used across age groups: TikTok, Instagram Reels, and YouTube Shorts. The focus of the study is not only on content accuracy but also on how messages are framed and how adolescents perceive source credibility.

The objectives of the study are: (1) to describe the characteristics of health message framing in short videos; (2) to analyze message credibility based on source clarity, evidence, information balance, and content creator competence; (3) to measure the health literacy level of urban adolescents; and (4) to analyze the relationship and contribution of framing, credibility, exposure to health videos, and age to health literacy. The research hypothesis is that message framing and credibility are positively related to health literacy, with credibility being the stronger predictor.

## METHODS

This study employed an analytical cross-sectional design consisting of two main components: a short video content audit and a respondent survey. The content audit was conducted to analyze the characteristics of health message framing, source credibility, information quality, and message presentation in short video content available on the TikTok, Instagram Reels, and YouTube Shorts platforms. Meanwhile, the respondent survey was conducted to identify adolescents' digital health literacy levels and analyze the relationship between perceptions of health message framing and credibility and respondents' health literacy.

The study population was adolescents aged 15–18 years who resided in urban areas and actively used at least one short video platform: TikTok, Instagram Reels, or YouTube Shorts. The sample size was set at 384 respondents. This number was determined based on the minimum sample requirement for analytical research and was considered sufficient for conducting relationship analysis and multiple regression.

Respondents were selected using a multistage sampling technique/stratified cluster sampling, taking into account the characteristics of administrative areas and educational units. The sampling stages included determining urban areas, selecting schools as research clusters, and then selecting respondents who met the inclusion criteria.

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A content audit was conducted on short health-themed videos that met the research criteria on TikTok, Instagram Reels, and YouTube Shorts. The unit of analysis was videos containing information, education, experiences, recommendations, or calls to action related to health. Each video was analyzed based on message framing, source credibility, information quality, use of scientific evidence, delivery style, and user engagement indicators such as views, likes, comments, and shares.

Respondent data collection was conducted using a structured questionnaire that measured social media usage characteristics, perceived credibility of health information sources, perceptions of message framing, and digital health literacy levels. The instrument was administered to respondents who met the inclusion criteria after obtaining consent to participate in the study.

Data were analyzed univariately to describe the distribution of respondent characteristics and video content characteristics. Bivariate analysis was used to identify the relationship between message framing and source credibility variables with digital health literacy levels. Furthermore, multiple linear regression was used to determine the contribution of message framing and source credibility to adolescents' digital health literacy after considering relevant confounding variables. The statistical significance level was set at $p < 0.05$.

A total of 180 health videos were created as simulation audit units, with TikTok 45%, Instagram Reels 35%, and YouTube Shorts 20% being distributed. Audit variables included: (a) type of content creator; (b) presence of references or sources; (c) type of framing; (d) clarity of call to action; (e) balance of benefits and risks; and (f) indications of misinformation. In real-world research, videos should be collected using predetermined keywords or hashtags, recorded by access date, and assessed by at least two independent coders.

Message framing was operationalized as the level of use of gain frame, loss frame, emotional frame, and mixed frame structures as perceived by respondents. The instrument consisted of 12 Likert-type statements on a 1–5 scale, such as "the video clearly explains the benefits of health measures," "the video explains the consequences of not taking health measures," and "the message uses emotion without omitting factual information." The final score was the average of all items.

Message credibility was measured using 12 items covering source competence, identity transparency, the presence of references, consistency with official sources, balance of information, and clarity of the boundary between fact and opinion. A score of 1 indicates very low credibility, and a score of 5 indicates very credible. Health literacy was measured on a scale of 0–100 based on the ability to access, understand, appraise, and use health information. The development of a concrete research instrument requires content validity, construct validity, and internal reliability testing before primary data collection.

Descriptive analysis was used to calculate means, standard deviations, frequencies, and percentages. Relationships between variables were analyzed using Pearson correlation. Multiple linear regression was used to estimate the contribution of framing, credibility, health video exposure, and age to health literacy. Regression coefficients are reported in standardized beta form to allow for comparison of predictive power. In real-world research, assumptions of residual

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normality, linearity, multicollinearity, homoscedasticity, and independence of residuals need to be checked before model interpretation.

Because the dataset presented is entirely simulated, it does not contain any personal data of real respondents. In actual research, research on adolescents requires ethical approval from an authorized ethics committee, parental/guardian consent as required, assent from the adolescent, identity protection, and specific procedures for handling sensitive content such as mental health, sexual health, or substance use.

## RESULTS

### 1. Respondent characteristics

**Table 1. Respondent characteristics**

| Karakteristik | n | % |
|---|---|---|
| Total | 384 | 100,0 |
| Age 15 years | 91 | 23.7 |
| Age 16 years | 104 | 27.1 |
| Age 17 years | 95 | 24.7 |
| Age 18 years | 94 | 24.5 |
| Perempuan | 220 | 57.3 |
| Men | 164 | 42.7 |

The mean age of the simulation respondents was 16.5±1.1 years. The proportion of females was slightly higher than that of males. Most respondents reported using more than one platform, but the platform most frequently used as a source of health exposure in the simulation was TikTok. These findings are used to illustrate the research scenario and do not represent the prevalence of platform use in the Indonesian population.

### 2. Characteristics of health video content

**Table 2. Results of the content audit of 180 health videos.**

| Audit indicators | n | % |
|---|---|---|
| Health workers | 60 | 33.3 |
| Health institutions | 28 | 15.6 |
| Influencer/non-professional | 92 | 51.1 |
| Explicit references | 39 | 21.7 |
| Partial reference | 52 | 28.9 |
| Without reference | 89 | 49.4 |
| Elements of misinformation | 48 | 26.7 |

The audit results showed that half of the content came from influencers or non-professional creators, while the remainder came from healthcare professionals and institutions. Only a small fraction, just over one-fifth of the videos, included explicit references. A total of 29.0% of the videos

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in the scenario contained at least one element of misinformation, such as overly absolute claims, generalized benefits, or recommendations that failed to specify specific conditions.

### 3. Framing, credibility, and health literacy scores

**Table 3. Descriptive statistics of main variables.**

| Variables | Mean | SD | Rentang teoritis |
|---|---|---|---|
| Framing | 3.60 | 0.33 | 1–5 |
| Credibility | 3.39 | 0.41 | 1–5 |
| Video exposure (hours/day) | 2.94 | 1.19 | 0,5–7 |
| Health literacy | 84.10 | 7.34 | 0–100 |

**Table 4. Comparison of indicators based on the dominant platform in the data.**

| Dominant platform | n | Hours/days | Framing | Credibility | Literacy |
|---|---|---|---|---|---|
| TikTok | 161 | 3.02 | 3.58 | 3.43 | 84.22 |
| Instagram Reels | 133 | 2.85 | 3.62 | 3.34 | 84.40 |
| YouTube Shorts | 90 | 2.94 | 3.60 | 3.40 | 83.45 |

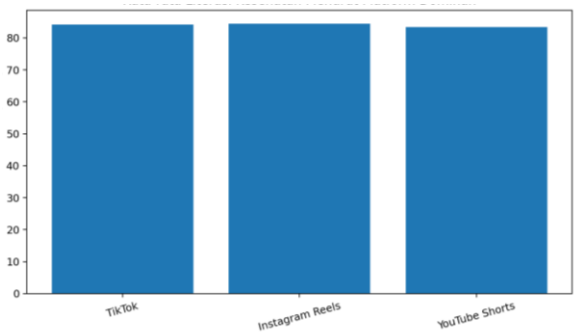


**Figure 1. Average health literacy by dominant platform**

In this data, the average health literacy score is in the medium-high category. YouTube Shorts showed the highest average literacy rate, followed by Instagram Reels and TikTok. This difference should not be interpreted as a causal effect of the platforms due to the cross-sectional design and the high likelihood of confounding. The platform can be a proxy for user characteristics, the type of content consumed, or information-seeking habits.

## DISCUSSION

The main findings of this study reveal three patterns. First, short health videos combine strong framing with an easily digestible format. Second, source credibility is a stronger factor than framing in explaining variations in health literacy. Third, high exposure to health videos does not automatically mean high health literacy if the quality of the source and evidence is inadequate. These three patterns are consistent with the literature that places appraisal skills at the heart of digital health literacy.

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The positive relationship between credibility and health literacy (r=0.36 in the data) aligns with a review by Freeman et al. (2023), which showed that adolescents assess credibility based on competence, professionalism, appearance, tone, the experiences of other users, and the presence of verification. This means that health promotion is not enough to simply convey a truthful message. Messages must be packaged in such a way that adolescents can identify the source, the basis for their claims, and whether there are commercial interests. In health communication practice, institutional identity, professional titles, source links, update dates, and statements of limitations can be elements of credibility that are relatively easy to display in short videos.

The data audit findings, which showed that 45% of videos lacked explicit references, are also relevant to the findings of Thang et al. (2023) found that the quality of medical content on short-form video platforms varies widely. In a health context, the short format creates a trade-off between accessibility and comprehensiveness. Simplification can facilitate comprehension but risks removing clinical context. For example, the message "Food X lowers blood sugar" differs significantly from "Under certain conditions, consuming X as part of a balanced diet can help control risk factors." Small differences in language can lead to very different interpretations.

Framing also showed a positive relationship (r=0.19 in the data) with health literacy. This finding can be explained by the principle that framing determines which information is most salient in the audience's attention. Gain frames emphasize the benefits of action, while loss frames emphasize the consequences of inaction. Emotional framing adds fear, hope, humor, or personal identification. In short videos, this combination of framing can increase attention and retention. However, if emotion replaces evidence, framing can become manipulation. Therefore, health promotion must distinguish between emotional engagement and emotional exaggeration.

The literature on persuasive short-form videos also supports attention to communication mechanisms, not just topics. A JMIR (2023) systematic review showed that short video research assessed the characteristics of format, content, and persuasive elements related to attitudes, beliefs, intentions, and behaviors. This implies that health promotion content design needs to incorporate communication objectives from the outset. Content aimed at increasing knowledge may require visualization of mechanisms; content aimed at encouraging screening may require calls to action; while content aimed at countering misinformation requires evidence and pre-bunking/debunking strategies.

Findings regarding influencers must also be interpreted in a balanced manner. Engel et al. (2024) warn of the risks of inaccurate information and conflicts of interest, while Sercu (2024) found a positive relationship between influencer use and health literacy in adolescents. These two findings are not contradictory. The quality of an influencer's impact depends on the type of influencer, topic, quality of information, interaction patterns, and the audience's ability to evaluate. In health promotion, a more productive approach is not to avoid influencers entirely, but to build partnerships with creators who meet criteria for credibility and transparency.

The findings of Taba et al. (2022) provide important insights into the gap between perceived and demonstrated digital health literacy. Adolescents may feel empowered to seek out health

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information, but they may not be able to evaluate the validity of claims. Because short videos often appear without active searching, evaluation skills become increasingly important. Health promotion programs in schools can train students to use a simple checklist: who is speaking, what is the claim, what is the evidence, when the information was updated, whether there are commercial interests, and whether the claim is consistent with official health sources.

From a policy perspective, the WHO (2022) defines health literacy as a social practice influenced by community norms and organizational structures. Therefore, interventions cannot simply focus on the individual. Schools, community health centers, health offices, professional organizations, and digital platforms need to play a role in shaping an information ecosystem that supports healthy decisions. The Ministry of Health also emphasizes the importance of empowering the younger generation.

## CONCLUSIONS

Based on the data analysis, the framing and credibility of health messages in short videos showed a positive relationship with health literacy among urban adolescents. Message credibility was the strongest predictor in the regression model, while framing made a significant additional contribution to improving health literacy. The content audit findings also indicated that the lack of clear references and the presence of misinformation remain potential problems in the short video environment, so the popularity of content cannot be used as a primary indicator of the quality of health information. Implications for health promotion include the need to develop content that is not only visually appealing and communicative, but also transparent regarding information sources, based on scientific evidence, presents risks and benefits in a balanced manner, and is easily verified by adolescents. Furthermore, strengthening digital literacy and adolescents' ability to assess source credibility needs to be a key component of health promotion strategies through digital media.

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