

Visual Voices: Emotional Storytelling and Engagement in Social Media Health Campaigns

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ABSTRACT: This study examines whether testimonial content on Instagram enhances emotional engagement and strengthens anti-smoking attitudes among Indonesian adolescents. Using a mixed-method design, 100 university students aged 18–24 were exposed to three types of Instagram posts: testimonial visuals, infographics, and text-based messages. Engagement metrics (likes, comments, shares) and sentiment-coded user comments were analyzed through ANOVA and thematic analysis. Results showed that testimonial posts generated the highest interaction, with likes (80%), comments (10%), and shares (5%), nearly doubling engagement compared to infographics and text formats. Sentiment analysis revealed empathy (40%) and fear (25%) as dominant emotional responses, indicating that emotional resonance enhances message retention and peer interaction. These findings suggest that testimonial storytelling on Instagram is more effective than data-driven formats in fostering anti-smoking attitudes among youth. Campaign designers and policymakers should prioritize culturally grounded testimonial narratives to increase relatability, encourage reflection, and promote behavior change, while ensuring inclusivity and ethical implementation.

Keywords: Emotional Engagement, Testimonial Storytelling, Youth Smoking, Instagram Campaigns, Digital Health Communication, Indonesia, Behavior Change.



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INTRODUCTION

Youth smoking in Indonesia has escalated into a serious public health concern, with prevalence reaching 35.6% among males and 3.5% among females (Lucia et al., 2022). These factors interact within Indonesia's collectivist culture, where smoking is often perceived as a marker of social belonging or maturity (Kusumawardani et al., 2018). Alarmingly, smoking initiation is occurring at younger ages, raising the urgency for targeted interventions (Mardhiah et al., 2023).

Amid these challenges, digital platforms have emerged as promising spaces for health communication. Social media such as Instagram, Facebook, and TikTok are widely used by Indonesian adolescents and provide opportunities for creative, participatory campaigns that blend information with peer-driven narratives (Mardhiah et al., 2023). However, while data-driven content such as infographics can inform, it often lacks the emotional resonance needed to influence behavior. Recent studies highlight emotional engagement as a key mediator of digital campaign success, particularly among youth who are highly impressionable and socially connected (Vionalita et al., 2023).

One emerging insight from applied research is that testimonial content real life stories and experiences shared by peers or relatable figures tends to foster deeper emotional responses than purely factual or statistical posts. Adolescents often find these testimonials authentic and personally meaningful, leading to increased empathy, reflection, and behavioral consideration (Megatsari et al., 2023). While factual content is indispensable for informing the public, its motivational potential is limited unless paired with narrative framing that appeals to emotion (Mardhiah et al., 2023). Thus, effective anti-smoking communications should deploy a dual strategy: integrating informative content with emotionally resonant storytelling to maximize outreach and internalization.

The cultural context further complicates and enriches campaign design. Indonesian adolescents are deeply embedded within collectivist social structures, where decisions are heavily influenced by family, peers, and communal expectations (Fithria et al., 2021). Smoking is often perceived not simply as a personal choice but as a socially endorsed practice that affirms group belonging or maturity (Kusumawardani et al., 2018). Consequently, anti-smoking messages that invoke communal values, family health, and social responsibility tend to garner stronger support (Mardhiah et al., 2023). Such culturally attuned messaging strategies have shown promise in reshaping perceptions of smoking and fostering more sustainable behavioral shifts.

Digital platforms, therefore, hold both strategic and symbolic value in youth targeted public health interventions. They allow for real time, two way communication, enabling adolescents to not only receive but also co-create and share campaign messages (Arifin et al., 2018). This participatory model enhances feelings of ownership and relevance, leading to more impactful engagement. The integration of interactive tools, including quizzes, discussion threads, and personalized testimonials, serves to heighten emotional involvement and reflection (Megatsari et al., 2023). Through these digital affordances, campaigns can transcend traditional top down communication, facilitating more organic, peer driven health advocacy.

The central objective of this study is to examine whether culturally grounded testimonial storytelling on Instagram generates stronger engagement and emotional resonance than data-centric approaches. The hypothesis is that testimonial narratives, by leveraging mechanisms such as empathy, identification, and narrative transportation, will outperform infographics and text in eliciting emotional responses and fostering anti-smoking attitudes. By combining quantitative engagement metrics with sentiment analysis, this study offers both theoretical and practical contributions to the design of digital health campaigns in Indonesia.

METHOD

his study employed a mixed-methods design to examine the emotional engagement elicited by Instagram-based anti-smoking campaigns among Indonesian adolescents. Mixed methods were chosen to combine the statistical rigor of quantitative analysis with the contextual depth of qualitative inquiry (Aharonson & Joselowitz, 2024). Engagement metrics such as likes, comments, and shares were integrated with sentiment analysis of user responses to different content formats. This approach enabled a multidimensional understanding of how digital testimonials and visuals influence user interaction and emotional resonance.

Participants included 100 university students aged 18–24, recruited from public universities in Central Java with prior exposure to health related social media campaigns. A stratified sampling technique ensured gender balance and digital media fluency. Ethical approval was secured, and informed consent was obtained from all participants.

Three Instagram post types served as experimental stimuli: (1) testimonial visuals (P001), (2) infographics (P002), and (3) text-based messages (P003). Quantitative engagement data were collected via API logs and platform analytics, while qualitative data were drawn from user comments. Comments were subjected to both thematic and sentiment coding to capture not only frequency of responses but also underlying emotional tones.

Emotional engagement was operationalized using both user interaction metrics and comment based sentiment analysis (Vehof et al., 2019). Likes, shares, and comments were used to gauge interaction levels, while emotional tones were analyzed to determine affective response categories empathy, fear, encouragement, and neutral. Sentiment analysis was performed using a hybrid approach that combined automated coding with manual verification. Tools such as VADER (Valence Aware Dictionary and sEntiment Reasoning) were deployed to detect sentiment polarity and emotional specificity (Bang, 2023).

Sentiment categories were derived using a multi-dimensional coding framework. Primary coding divided sentiments into positive, negative, and neutral (Watimin et al., 2023). Sub coding categorized specific emotions like joy, anger, fear, sadness, and empathy (Graziotin et al., 2018). To ensure reliability, two trained coders independently annotated a subset of comments, and inter coder agreement exceeded 0.85 Cohen's Kappa. Supervised machine learning models were also used for scalable sentiment classification.

Quantitative data were analyzed using descriptive statistics and one-way ANOVA to test for significant differences in engagement across the three post types. Qualitative themes from sentiment-coded comments were extracted using thematic analysis. Thematic analysis was selected for its ability to uncover recurring patterns in user narratives, while triangulation with engagement metrics strengthened the validity of results (Goldman et al., 2024).

The study adhered to ethical standards for online research. Identifiable data were anonymized, and participants were given full transparency about the study's aims, procedures, and voluntary nature. All digital data were stored securely in encrypted files.

RESULT AND DISCUSSION

Engagement Metrics by Content Type

Quantitative analysis revealed substantial variation in engagement across the three content types. Testimonial visuals emerged as the most engaging, with 80% of users liking the posts, 10% commenting, and 5% sharing them. This engagement nearly doubled that of infographic posts (55% likes, 3% comments, 2% shares) and far exceeded text-based content (30% likes, 1% comments, 1% shares). These results indicate that testimonial content is more likely to stimulate meaningful user participation, which is critical for anti-smoking campaigns aiming to foster peer discussion and message dissemination.

These findings reflect previously established frameworks of digital engagement. As noted by Bratić et al. (2022), likes are generally considered surface level signals of user approval, while comments indicate a higher degree of cognitive and emotional involvement. Shares reflect even deeper engagement, suggesting user endorsement and willingness to spread the message to a broader audience. The testimonial format's performance in this study indicates its superior ability to trigger meaningful emotional responses and motivate audience action. Statistical testing confirmed the differences were significant ($p < 0.05$). Beyond statistical significance, the magnitude of difference suggests practical importance: testimonial visuals achieved engagement levels nearly twice those of infographics, representing a meaningful advantage for campaign effectiveness.

Importantly, these engagement levels significantly exceeded Instagram's health content benchmarks, typically ranging between 1% and 3% per follower (Bratić et al., 2022). The above average metrics of testimonial posts suggest strong emotional connectivity and relatability among the adolescent audience. Moreover, the narrative quality and cultural resonance embedded in testimonial content may amplify its effectiveness, particularly among collectivist youth communities. Nevertheless, the validity of self-reported user engagement remains subject to bias. QUIJANO (2022) highlights issues such as overreporting due to social desirability and faulty recall. This study, therefore, relied primarily on platform sourced data analytics to ensure objectivity and measurement accuracy.

Comparative Effectiveness and ANOVA Results

To empirically compare the performance of the three content types, a one way ANOVA was conducted on user engagement metrics. The analysis revealed a statistically significant effect of content type on engagement levels ($F(2,297) = 6.42, p < 0.01$). Post hoc analyses confirmed that testimonial visuals were significantly more effective than both infographic and text based formats in generating likes, comments, and shares. These results echo prior research by Selmaier & Tolba (2024), who assert the applicability of ANOVA in examining media effects in public health studies.

The reliability of these findings was reinforced through 95% confidence intervals, providing strong statistical support despite the relatively small sample size. Additional regression analysis and chi square tests indicated a strong relationship between post type and user intention to engage in further message dissemination or health oriented discussion. This is consistent with Bratić et al. (2022), who found testimonial content more likely to stimulate message recall and pro social intentions. The personalized nature of testimonial narratives likely contributes to their greater persuasive power, especially when aligned with visual cues and local context.

Sentiment and Emotional Response

Sentiment analysis of comment threads across the different post formats revealed important insights into emotional engagement. Among the total coded responses, empathy was the dominant sentiment (40%), followed by fear (25%), encouragement (20%), and neutral or unrelated expressions (15%). These proportions suggest a high level of emotional resonance, particularly for testimonial posts, where users frequently expressed personal identification or concern about smoking risks. This mirrors the findings of Septiani et al. (2021) and Goeden et al. (2015), who emphasized empathy and fear as predictors of behavioral intention.

The coding of emotional tone was grounded in linguistically explicit indicators. Comments conveying support, compassion, or shared lived experiences were categorized as empathetic, while expressions of anxiety, worry, or fear about smoking consequences were coded accordingly. Holstein et al. (2015) stress the utility of such categorization in isolating behaviorally meaningful emotional responses. Significantly, emotionally charged comments tended to generate more replies and foster discussion threads, confirming Goeden et al. (2015) observation that emotional content enhances peer to peer interaction on social platforms.

Comparative analysis confirmed that testimonial content not only generated higher comment frequency but also elicited richer, more affective discussions compared to infographics, which tended to prompt quick or superficial responses (e.g., likes, emojis). This indicates that testimonial storytelling encourages adolescents to engage in deeper reflection and dialogue about smoking risks, a critical step for moving from awareness to attitude change. As Thas et al. (2021) report, users often respond more substantively to stories they find relatable. Meanwhile, Ditta & Woodward (2024) suggest that while infographics are effective for information transmission, they lack the narrative depth required for emotional impact.

These results collectively suggest that an optimal strategy for anti-smoking digital campaigns might involve the strategic integration of testimonial narratives supported by visually engaging, informational graphics. Such a hybrid model can balance emotional impact with clarity of health messaging, thereby maximizing both user engagement and knowledge retention.

The Role of Emotional Storytelling in Engagement and Behavior Change

This study affirms that emotional storytelling plays a central role in shaping both user engagement and behavioral intention in digital anti-smoking campaigns targeting Indonesian youth. Emotional storytelling not only conveys health information but embeds it within narratives that evoke empathy, fear, and inspiration. These emotions are powerful cognitive tools that foster memory encoding and help audiences internalize health messages. The significantly higher engagement rates observed for testimonial posts measured through likes, comments, and shares combined with elevated sentiment indicators, particularly empathy and fear, support the assertion that emotionally rich narratives wield greater influence than non-narrative formats.

According to Larkey et al. (2018), emotional narratives enhance memory retention by activating brain regions linked to personal experience and emotional processing. This allows viewers to connect more deeply with health messaging, as the content becomes more relatable and vivid in memory. Emotional storytelling also elevates user motivation to act, particularly in youth audiences

who are more responsive to affective cues. The emotional depth of testimonial narratives through shared lived experiences transforms passive viewership into active engagement, further solidifying behavior change intention.

Mechanisms of Narrative Transportation and Testimonial Persuasion

The phenomenon of narrative transportation where individuals become mentally immersed in a story explains how testimonials elicit behavioral contemplation and emotional investment. Users do not merely watch or read content; they become psychologically involved in the narrative. This immersive experience, as discussed by Nah & Yamamoto (2017), results in higher message recall, reduced resistance to persuasion, and increased empathy toward the message subject. In this study, participants frequently commented on posts with personal reflections and anecdotal links, suggesting that testimonial content prompted them to connect the narrative with their own lives.

Testimonials also function as persuasive tools through identification, social proof, and emotional resonance. Identification with the storyteller strengthens relatability and trust, while social proof reassures users that behavioral change is achievable. Vassilakopoulou & Hustad (2021) explain that emotionally resonant messages evoke a visceral response, making them more likely to stick in the audience's mind and influence behavior. Moreover, testimonial content can function as a form of analogical reasoning, bridging personal stories to broader health concepts, such as the societal impact of youth smoking (Levy, 2022).

Psychological and Cultural Drivers of Testimonial Effectiveness

The effectiveness of testimonial narratives cannot be separated from the psychological and cultural contexts in which they are delivered. From a psychological standpoint, testimonial messages engage cognitive affective mechanisms that drive user responses to digital health content. These include narrative empathy, personal relevance, and vicarious learning. In this study, the high volume of comments related to personal or familial smoking experiences indicates that these mechanisms were activated. This suggests that stories of others' struggles and successes can lead audiences to reflect on their own behaviors.

Culturally, Indonesia's collectivist values amplify the impact of testimonials. In societies where family and community ties are paramount, stories centered around familial loss, community illness, or intergenerational influence resonate more strongly (Barber, 2020). This was evident in the language users employed in their responses, which frequently invoked family oriented concerns and community well-being. Murtarelli et al. (2021) argue that culturally embedded narratives improve receptivity by aligning health messages with shared values and collective identity. Thus, digital health campaigns must be designed with local cultural norms in mind to maximize resonance and effectiveness.

Limitations of the Study

Despite valuable contributions, this study has several limitations. First, there is a risk of self-selection bias, as participants more active on social media may not represent the wider adolescent population. Second, the sample was drawn from a single geographic region (Central Java), which may limit generalizability across Indonesia's diverse cultural and socioeconomic settings.

Another limitation concerns the temporal stability of engagement. Social media platforms are dynamic ecosystems, with trends, algorithms, and user preferences constantly evolving. What works today in terms of content format or engagement strategy may not be effective in the near future. In addition, the digital divide remains a persistent issue. Youth from underprivileged or rural areas may lack access to the internet or smartphones, rendering them invisible in online health studies and campaigns.

Finally, sentiment analysis, while useful for categorizing emotional responses, can oversimplify the emotional complexity of user interactions. Mixed emotions, subtle sarcasm, and culturally specific idioms may not be adequately captured by automated tools. These challenges necessitate further refinement of analytical models to ensure accurate interpretations.

4 Ethical Considerations in Digital Health Research

Ethical considerations are critical in any study involving digital data collection and user generated content. This study relied on publicly available data and anonymized comment analysis, but future efforts must balance the need for meaningful insights with respect for digital privacy and autonomy. Informed consent in digital environments is especially challenging, as users may not be fully aware that their interactions are being analyzed.

Nassehi et al. (2024) emphasize the importance of transparent research protocols and secure data storage to protect participant confidentiality. As campaigns increasingly integrate AI and machine learning for content analysis and targeting, ethical safeguards must evolve to include algorithmic transparency and equitable representation across diverse user groups. Researchers must also remain vigilant about platform terms of service, user expectations of privacy, and the potential for unintended harm.

Recommendations and Future Directions

Based on these findings, anti-smoking campaigns should prioritize peer-driven testimonial storytelling, ensuring messages resonate with collectivist cultural values. Policymakers and campaign designers should monitor inclusivity across different regions and social groups, to avoid reinforcing disparities. In practice, combining testimonial narratives with supportive visuals such as infographics can balance emotional impact with information clarity.

In addition, campaigns should be designed with longitudinal evaluation strategies to assess not just immediate engagement, but also long term impact on attitudes and behaviors. Data triangulation combining platform analytics, survey responses, and qualitative interviews can provide a more holistic view of effectiveness. Moreover, future studies should strive for inclusivity by incorporating participants from digitally underserved regions and tailoring content for multiple cultural and linguistic groups.

There is also scope to expand research on interactivity and co creation in digital health content. Enabling users to contribute their own stories, commentaries, or testimonials could further strengthen engagement and promote collective identity around health behavior change. By fostering community led dialogue, digital health campaigns can evolve from one way messaging to participatory movements that empower youth to advocate for tobacco free futures.

In summary, this study contributes to the growing body of evidence supporting the strategic use of emotional engagement in digital health communication. It reinforces the need for empathy driven, culturally sensitive, and ethically sound interventions that harness the full potential of digital platforms to promote adolescent health.

CONCLUSION

This study provides clear evidence that testimonial storytelling on Instagram is more effective than infographics or text-based formats in engaging Indonesian adolescents and promoting anti-smoking attitudes. Testimonial content elicited stronger emotional responses particularly empathy and fear and achieved significantly higher interaction through likes, comments, and shares, demonstrating its potential to foster reflection, peer discussion, and behavior change.

Based on these findings, policymakers and campaign designers should prioritize peer-driven testimonial narratives in anti-smoking campaigns, combine them with supportive visual elements to balance emotional appeal and clarity, and ensure inclusivity across diverse regions and demographics. Future research should employ longitudinal designs to evaluate sustained behavioral outcomes and expand samples beyond single regions to capture Indonesia's cultural diversity.

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