Research Square

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A Quantitative Content Analysis of Anxiety Related Mental Health Misinformation Among College Students on Xiaohongshu

Qiao Li
Chongqing Normal University
Shichen Wu
Chongqing Normal University
Xinyi Hu
Chongqing Normal University
Ruilin Duan
20210051@cqnu.edu.cn
Chongqing Normal University

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Abstract

Anxiety is a prevalent issue among college students, and low mental health literacy (MHL) often hinders help-seeking. Social media has become a key source for college students to access anxiety-related mental health information, while unregulated platform content brings misinformation risks, and relevant research remains insufficient.

This study was grounded in MHL theory to construct a targeted analytical framework for evaluating social media mental health content. A pilot quantitative content analysis was conducted on 100 posts related to anxiety of college students on Xiaohongshu. Information sources, content categories, coping advice, misinformation, MHL promotion, and stigmatizing language were examined. Fisher's exact test was applied for categorical association when expected cell counts were low. Most posts were from non-professional sources (97%) and focused on coping advice (65%), mainly lifestyle adjustments and positive psychological suggestions. Although the prevalence of misinformation (3%) and stigmatizing language (5%) was low, MHL promoting content was extremely scarce (7%). A statistically significant association between non-professional sources and misinformation was identified using Fisher's exact test (p = .039). Anxiety-related content on Xiaohongshu supported emotional needs but lacked professional guidance and MHL components. Collaboration between mental health professionals and platforms was needed to improve content quality and support mental health among college students. These preliminary pilot findings offer insights for platform governance and MHL education.

Introduction

Anxiety is one of the most common mental health issues among college students (Li et al. 2022). It impairs emotional well-being and triggers adverse cognitive, behavioral, and physiological outcomes (Borkovec et al. 1998; Tan et al. 2025; Wang et al. 2025). Studies have revealed a high prevalence of anxiety among Chinese college students, with rates reaching 18.2% (Han et al. 2021). In addition, one in five college students in Spain has been reported to experience anxiety (Ramón-Arbués et al. 2020). Furthermore, research has shown that the COVID-19 pandemic has caused unprecedented levels of anxiety among college students (Goldrick-Rab et al. 2022; Cao et al. 2020).

Despite the growing awareness of the negative impact of anxiety on college students, many of them hesitate to seek help from professional help or mental health services (Ebert et al. 2019; Kemp et al. 2023). Research has indicated that low levels of mental health literacy (MHL) was an important barrier to seeking help among college students (Ali et al. 2020; Han et al. 2017). MHL is defined as "knowledge and beliefs about mental disorders that aid their recognition, management, or prevention" (Jorm 2000). The enhancement of MHL was of great significance for the facilitation of early intervention and the promotion of professional help-seeking.

Social media has become a major means of disseminating mental health information. These platforms are increasingly being used by public health agencies and campaigns to share health-related knowledge to shape public attitudes and awareness towards mental health (Betton et al. 2015; Smith-Frigerio 2020).

Notably, college students used social media platforms to address various of mental health needs, such as seeking social support (Wright 2012; Zhang 2017), accessing evidence-based mental health information, and receiving mental illness education (Naslund et al. 2019; O'Reilly et al. 2019). However, the mental health content on social media was frequently intricate and inconsistent in quality. This was due to the uncontrolled and unregulated proliferation of specialized content and content creators catering to various mental health conditions (Kbaier et al. 2024).

Much of this content was created without input or review by mental health professionals, which increased the risk of misinformation. Such mental health-related misinformation could spread rapidly and widely, potentially leading to a loss of trust in healthcare professionals and causing delays in seeking or receiving effective care (Suarez-Lledo et al. 2021; Caceres et al. 2022). The problem was that college students often used social media to find information about mental health, but they may not be able to judge whether this information was true or false. Therefore, it was necessary to explore the prevalence, characteristics and impacts of misinformation about mental health on social media.

Although there have been studies to investigate the mental health misinformation on social media, most studies have focused on specific mental health conditions, such as depression (Perlis et al. 2022), attention deficit hyperactivity disorder (ADHD) (Hulsizer et al. 2025), obsessive-compulsive disorder (OCD) (Cheng et al. 2025), or misinformation related to public health events like COVID-19 (Verma et al. 2022). Relatively little attention has been paid to anxiety among college students. Furthermore, most of the available evidence has been derived from social media platforms such as TikTok (Kirkpatrick et al. 2024), YouTube (Mayor et al. 2025), Facebook (Bizzotto et al. 2023), and Twitter (Edinger et al. 2023). In China, Xiaohongshu (also known as RedNote) is a dominant lifestyle-oriented platform extensively used by young people, where they frequently share personal experiences, emotional expressions, and mental health-related narratives. However, the examination of anxiety-related misinformation on Xiaohongshu, particularly from the perspective of MHL, remained limited.

To address these gaps, a pilot exploratory quantitative content analysis was conducted. The user-generated posts on Xiaohongshu that discuss anxiety issues related to college students were examined. Based on MHL theory and existing literature (Pretorius et al. 2022), posts were coded across six dimensions: information source, content category, type of coping advice, mental health misinformation, mental health literacy promotion, and stigmatizing language. The aim of this study was to: (1) assess the quality and credibility of the content; (2) identify prevalent types and dissemination patterns of misinformation; and (3) analyze how the content performs in terms of promoting MHL and using stigmatizing language. These findings will provide evidence on the role of social media in shaping mental health information ecosystems for college students, and offer insights for targeted interventions, platform governance, and MHL education strategies.

Methods

Data collection and sampling

This study employed a quantitative content analysis to investigate anxiety-related content among college students on Xiaohongshu (RedNote). A total of 210 posts were initially retrieved from the “Notes” section of Xiaohongshu using targeted search queries. Subsequently, Qiao Li and Shichen Wu, who both have a background in psychology, applied strict inclusion and exclusion criteria to these initial posts. After carefully screening the titles, images, and main text of the posts, 110 posts were excluded for reasons such as being off-topic content, containing advertisements or lacking specific relevance to anxiety among college students. The final sample of 100 posts was determined by practical manageability for manual dual coding within a six-dimensional framework, consistent with a pilot exploratory design. Data collection spanned from October 1 to November 15, 2025.

Search strategy and screening

Relevant posts were retrieved using the search function on Xiaohongshu with Chinese multi-word search terms: “□□□ □□ □□□□”, “□□□ □□□ □□□□”. All collected posts were in Chinese. Screening was based solely on thematic relevance, with no prior assessment of the quality or scientific credibility of the posts.

The criteria were as follows: inclusion criteria required posts to primarily discuss the experiences, symptoms, or coping strategies related to anxiety among college students. Exclusion criteria ruled out content unrelated to anxiety, reposts, advertisements, and posts with incomplete or unclear information. To ensure reliability, two researchers independently screened all retrieved posts against the inclusion and exclusion criteria.

Coding framework

Six core dimensions for each post were coded, including information-source type, content category, type of coping advice, mental-health misinformation, MHL promotion, and stigmatizing language.

Operationalization of coding categories

All coding was informed by the DSM-5 and ICD-11 to ensure objectivity and replicability. Core definitions are provided below:

Information source categories

- General discussion: Sharing opinions without the personal experience of anxiety.
- Personal narrative: Accounts of anxiety-related experiences from the personal perspective.
- Professional citation: Explicit reference to psychiatrists, counsellors or official clinical documents.
- Vague authority: Statements made by experts that lack a verifiable source or expert identity.

Lifestyle adjustment versus anti-professional advice

- Lifestyle adjustment: Suggestions for mild anxiety that can be used as non-clinical supplementary coping strategies include things like regular sleep and exercise.
- Anti-professional advice: Guidance against formal mental healthcare, such as discouraging the seeking of professional help or discontinuing prescribed psychiatric medication without consulting a professional.

Mental health misinformation

Statements inconsistent with DSM-5 or evidence-based anxiety intervention guidance. Each claim within a post was cross-referenced against these clinical references during coding, covering distorted views on anxiety causes, symptoms or interventions lacking clinical support.

MHL promotion

The content aligned with Jorm's (2000) criteria for MHL: identifying anxiety symptoms, recognizing risk factors, and introducing formal help-seeking channels. Single, isolated coping tips were not counted.

Stigmatizing language

Negative stereotypes and shaming remarks about people with anxiety or those seeking mental health support.

Coding procedure and data processing

The unit of analysis was the full Xiaohongshu note. The main body of text, hashtags, subtitle text in videos and text embedded in static images were all coded. Comments at the post level were excluded. For multi-theme posts, only the text segments relating to anxiety among college students were coded. Pure video posts without readable text or subtitles were excluded during the screening process. The coding process was conducted independently by two trained researchers (Qiao Li and Shichen Wu). Before conducting the formal analysis, both coders completed a standardized training session. This included a detailed review of the codebook and a pilot coding exercise involving 20 posts. The coding criteria were the focus of a discussion during the pilot phase, where discrepancies were identified and resolved to ensure everyone had the same understanding.

Inter-coder reliability was assessed using both the exact agreement rate and Cohen's kappa coefficient. According to Landis and Koch (1977), values of kappa ≥ 0.80 indicated excellent inter-coder reliability. After establishing acceptable inter-coder reliability, the two researchers proceeded to code the remaining posts independently.

Data analysis

All coded data were quantified and analyzed using SPSS. Descriptive statistics were calculated for all categorical variables. Pearson’s chi-square test was used for cross-tabulation analyses when all expected cell counts were ≥ 5. Fisher's exact test was applied when expected cell counts fell below 5. The results were presented in Table 1 and Table 2."

Results

Inter-coder reliability

Table 1
Coding dimensions and inter-coder reliability.

Coding Dimension	Valid Samples	Exact Agreement (n)	Exact Agreement Rate (%)	Cohen’s Kappa
Type of information source	100	94	94.0	0.88
Major content category	100	97	97.0	0.92
Type of coping advice	65	59	90.8	0.89
Mental health misinformation (Yes/No)	100	100	100.0	1.0
Mental Health Literacy (MHL) promotion (Yes/No/Uncertain)	100	99	99.0	0.93
Stigmatizing language (Yes/No)	100	99	99.0	0.85

The results of the inter-coder reliability analysis were presented in Table 1. The exact agreement rates for all six coding dimensions ranged from 90.8% to 100%, and the Cohen’s kappa coefficients ranged from 0.85 to 1.00. All Kappa values were above 0.80, which indicated excellent inter-coder reliability for the coding process.

Descriptive statistics of key variables

Table 2
Descriptive statistics of key variables (n = 100).

Variable	Category	Frequency (n)	Percentage (%)
Information source	General discussion	60	60.0
	Personal narrative	37	37.0
	Professional citation	2	2.0
	Vague authority	1	1.0
Content category	Coping advice	65	65.0
	Symptom description	24	24.0
	Other	6	6.0
	Social comment	3	3.0
	Systemic criticism	2	2.0
Type of coping advice	Lifestyle adjustment	32	49.2
	Positive psychological suggestion	26	40.0
	Anti-professional advice	4	6.2
	Structured coping strategy	2	3.1
	Commercialized solution	1	1.5
Mental health misinformation	No	97	97.0
	Yes	3	3.0
MHL promotion	No	92	92.0
	Yes	7	7.0
	Uncertain	1	1.0
Stigmatizing language	No	95	95.0
	Yes	5	5.0

Descriptive statistics for the key variables analyzed across the 100 Xiaohongshu posts were presented in Table 2.

Information sources

The analysis showed that non-professional sources were dominated, accounting for 97.0% of all posts (60.0% general discussion, 37.0% personal narrative), while professional citations accounted for just

2.0%, with vague authority posts being the least common at 1.0%. Representative anonymized translated excerpts illustrate different source types:

- *General discussion*: “Nowadays, college students tend to feel anxious. Partly because they are exposed to large amounts of information but lack a deep understanding of it.”
- *Personal narrative*: “I suffered from mental health issues and studied at home for three years during high school. I also had to a break from college when my anxiety and depression flared up again.”
- *Professional citation*: “Drug treatments for depression and anxiety should be administered under medical supervision. Psychotherapy includes cognitive behavioral therapy-based interventions.”
- *Vague authority*: One post offered mental health suggestions for introverted students under the guidance of a counsellor, despite having no verifiable professional credentials.

Cross-analysis revealed that all 3 posts containing misinformation were from non-professional sources (2 from general discussion, 1 from personal narrative), with no misinformation found in posts citing professional sources. Given the small expected cell counts, a two-tailed Fisher’s exact test was applied. A statistically significant association was observed between non-professional information sources and misinformation occurrence (Fisher’s exact test $p = .039$).

Content category

The primary focus of the posts was most frequently on coping advice (n = 65, 65.0%), followed by symptom description (n = 24, 24.0%). Social commentary (n = 3, 3.0%) and systemic criticism (n = 2, 2.0%) were rarely observed. The remaining posts were categorized as ‘other’ (n = 6; 6.0%). Cross-analysis of content category and MHL promotion revealed that five out of seven MHL-promoting posts were categorized as coping advice.

Type of coping advice

Among the 65 posts offering coping strategies, lifestyle adjustments were the most common suggestion (49.2% of all coping strategy posts), followed by positive psychological suggestions (40.0%). Collectively, these two subcategories constituted 89.2% of all advice content. The less prevalent subcategories included anti-professional advice (n = 4, 6.2%), structured coping strategies (n = 2, 3.1%), and commercialized solutions (n = 1, 1.5%). Representative anonymized and translated excerpts for each subtype of coping advice are shown below:

- *Lifestyle adjustment*: “If you’re feeling worn out from schoolwork, you can take short breaks, go outside for some fresh air and do things that help you relax.”
- *Anti-professional advice*: “It is not advisable to rely entirely on counselling services. Sometimes, you can only rely on yourself to get through anxious periods.”
- *Structured coping strategy*: “If you experience acute somatic anxiety symptoms outdoors, take deep breaths and repeatedly tell yourself that you are safe.”

- *Commercialized solution*: Some posts recommended digital tools or consumer products as a quick and easy way to reduce study-related stress.

Mental health misinformation

Regarding mental health misinformation, only three posts (3.0%) contained inaccuracies, while the vast majority (n = 97, 97.0%) were free of misinformation. For example, one post claimed that severe anxiety was caused by magnesium deficiency alone and suggested that psychiatric medication be stopped in favor of supplements. The post claimed that this would lead to a “cure” within two weeks. However, this claim was not in line with the DSM-5 and ICD-11 guidelines.

MHL promotion

There was a limited amount of content with the potential to promote MHL. Most posts (n = 92, 92.0%) did not promote MHL, while only seven posts (7.0%) were identified as having a positive effect, and one post (1.0%) was coded as uncertain. Representative anonymized translated excerpt of MHL-promoting content:

- “If persistent somatic discomfort caused by anxiety lasts for a long time and interferes with daily study and life, it is advisable to seek formal medical or psychological support from relevant institutions.”

Stigmatizing language

Stigmatizing language was uncommon in the collected posts. The majority of posts (95 out of 100, or 95%) used neutral, non-stigmatizing expressions. Only five posts (5%) contained stigmatizing language towards anxiety or help-seeking behaviour. For instance, one post described students visiting campus counseling centers as mentally weak and unable to handle normal academic pressure.

Discussion

A pilot exploratory quantitative content analysis was conducted on 100 anxiety-related posts concerning college students on Xiaohongshu. The focus of the study was on information sources, content characteristics and overall content quality. The findings revealed that non-professional information sources and content predominated, and that these sources focus on coping advice for these posts. Although the prevalence of explicit misinformation was low, elements that promote MHL were generally lacking in the posts.

The presence of non-professional sources, primarily in the form of general discussions and personal narratives, aligned with the core identity of Xiaohongshu as a lifestyle and experience-sharing platform. This pattern probably fulfils strong user demand for emotional connection and communication with others when dealing with anxiety. However, the limited inclusion of content from professional citations suggested a lack of authoritative knowledge about mental health in these conversations. More

importantly, Fisher's exact test confirmed a significant association between non-professional sources and the prevalence of mental health misinformation (p = .039), with all three misinformation posts originating from non-professional sources.

Regarding content categories, the most common type of post was one offering coping advice. The analysis of coping strategies showed that lifestyle adjustments and positive psychological suggestions were the two most common types. This distribution reflected the practical information needs of college students seeking anxiety-related content online. The high proportion of healthy, supportive advice further suggested that peer-generated content on the platform was largely constructive, offering positive reinforcement. Nevertheless, there was a lack of well-organized ways to deal with problems, and the occasional piece of advice that was against professional standards showed that the scientific information available was not very reliable. Consequently, the platform failed to meet the needs of users with severe anxiety who require information on professional intervention methods.

In terms of content quality, these anxiety-related posts have shown low rates of mental health misinformation and stigmatizing language, which contributed to a supportive environment that may help reduce stigma toward anxiety. However, given the small sample size (n = 100) and the extremely low observed frequency of misinformation (n = 3), these prevalence estimates should be treated with caution and regarded as provisional indicators rather than reliable population-level benchmarks.

Conclusion

In conclusion, this pilot exploratory quantitative content analysis preliminarily analyzed 100 anxiety-related posts among college students on Xiaohongshu. The findings showed that the content of these posts could meet the demand for emotional resonance and practical coping strategies, and these posts contain low-harm content about mental health, with low misinformation (3.0%) and stigmatizing language (5.0%). However, the lack of professional sources (2.0%), structured strategies (3.1%), and MHL-promotion content (7.0%) limited its effectiveness as a resource for deeper mental health education and clinical support.

The statistically significant correlation between non-professional information sources and misinformation (Fisher's exact test, p = .039) emphasized the need for improved scientific content. These findings suggested that mental health professionals should work more closely with social media platforms to improve the scientific accuracy and credibility of mental health-related content. Future studies could employ hashtag-based sampling strategies, increase sample sizes and conduct cross-platform comparisons in order to gain a more comprehensive understanding of online mental health communication.

Limitations

Although this pilot exploratory study provided new insights into anxiety-related content among college students on Xiaohongshu, several limitations should be considered.

First, the modest sample size (n = 100) was chosen to assess the feasibility of initial coding rather than for statistical generalizability. Prevalence estimates should therefore be considered provisional. Second, the use of keywords for retrieval may have excluded organic, hashtag-driven conversations, which could have biased the sample towards structured posts. Third, the user base of the platform was predominantly young women, which restricted the generalizability of the findings. Fourth, the cross-sectional design prevented longitudinal inference, and the lack of user engagement data made the real-world impact of such content unclear.

Declarations

Funding statement

The research was funded by the Doctoral Scientific Research Foundation of Chongqing Normal University, China (23XWB011, 23XWB045).

Ethics statement

All data analyzed in this work were available on Xiaohongshu. Data collection was performed in full compliance with the laws and regulations of the People's Republic of China. No private and sensitive personal information were involved in or collected during the research process.

Ethics approval and consent to participate

Not applicable.

Author contributions statement

In this study, Qiao Li and Shichen Wu collected and coded the data. Xinyi Hu participated in data coding and inter-coder reliability assessment. Ruilin Duan designed the study and wrote the manuscript.

Consent for publication

Not applicable.

Competing interests policy

The authors declare no competing interests.

Authorship

The corresponding author confirms that all authors have read the journal policies and that the manuscript is submitted in accordance with those policies.

Data availability

Data sets generated during the current study were available from the corresponding author on reasonable request. The secondary data source for this study is Xiaohongshu (https://www.xiaohongshu.com/).

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