A Thematic Analysis of the Relationship between Emotions and Information Behavior and the Role of Emotions in the COVID-19 Context (Postprint)

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Abstract

[Purpose/Significance]Under public health emergencies, public emotional issues are particularly complex. Exploring the role of emotions in public information behavior during such emergencies helps relevant departments understand the characteristics of public emotional changes and the interaction between emotions and information behavior, thereby improving response capabilities to such crisis events and mitigating the psychological harm of the pandemic on the public.[Method/Process]Through semi-structured interviews with 32 members of the public, thematic analysis was employed to extract themes regarding "the interaction between public emotions and information behavior" during the COVID-19 pandemic, and to identify the role of emotions within this interaction.[Results/Conclusion]The study reveals that in the COVID-19 pandemic context, on the one hand, positive and negative emotions among the public were intertwined, collectively forming an "emotion cluster" that drove information behavior through both explicit and in-depth pathways; on the other hand, information behavior also influenced emotions: unidirectional information output behavior served as an outlet for emotional release, while external interaction factors and information characteristics during the behavioral process could cause emotional changes. This paper finally establishes an interaction model between information behavior and emotions, identifies the role of emotions in the "initial emotion-information behavior-emotion change" process, and provides several insights for relevant departments in responding to public health emergencies.

Full Text

Preamble

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A Thematic Analysis of the Relationship Between Emotion and Information Behavior and the Role of Emotion in the Context of COVID-19*

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Abstract: [Purpose/Significance] During public health emergencies, public emotional issues become particularly complex. Exploring the roles that emotions play in public information behavior during such emergencies can help relevant departments understand the characteristics of public emotional changes and the interactive effects between emotions and information behavior, thereby improving response capabilities to such crises and mitigating the psychological harm of epidemics on the public. [Method/Process] Through semi-structured interviews with 32 members of the public, thematic analysis was used to extract themes regarding "the interplay between public emotion and information behavior" during the COVID-19 pandemic and to identify the roles of emotion within this interplay. [Result/Conclusion] The study found that during the COVID-19 pandemic, on the one hand, positive and negative emotions among the public were intertwined, forming emotion clusters that drove information behavior through both explicit and deep pathways. On the other hand, information behavior also influenced emotions: one-way information output behavior served as an outlet for emotional release, while external interaction factors and information characteristics during the behavior process could change emotions. This paper finally establishes an interplay model of information behavior and emotion, identifies the role of emotion in the "initial emotion-information behavior-emotion change" process, and provides several insights for relevant departments in responding to public health emergencies.

Keywords: Emotion; Information Behavior; Thematic Analysis Method; COVID-19 **Classification Number:** G250 **DOI:** 10.13266/j.issn.0252-3116.2022.08.011

On January 31, 2020, the COVID-19 outbreak was declared a public health emergency of international concern [1], representing the most serious major public health emergency in China since the founding of the People's Republic in terms of transmission speed, infection scope, and prevention difficulty [2]. The COVID-19 pandemic, accompanied by information aggregation and superposition, caused public emotions to fluctuate, resulting in particularly complex emotional issues. Michael et al. [3] proposed that emergency events trigger stress responses [7]. However, current research on public negative emotions during emergencies has focused primarily on anxiety [8] and burnout [9], with little exploration of positive emotions, lacking comprehensive studies that fully depict public emotional states during the pandemic.

On the other hand, emotions play an important role in human life. Emotions are considered one of the abilities that guide one's thinking and action [10], closely related to information acquisition [8], information sharing [11-12], in-

formation seeking [13], and other behaviors. Conversely, information behavior also affects the emotional system [14-16]. In this context, individuals' emotions differ significantly from daily life, often accompanied by a series of negative emotions such as panic, anxiety, and contempt. During public emergencies, individuals or groups often exhibit complex psychological characteristics, showing varying degrees of crisis psychological reactions [4], one manifestation of which is stress response—a state of tension produced in response to changes in internal and external environments [5]; another manifestation is emotional change, with negative psychological reactions such as shock, blame, fear, anger, and anxiety leading to psychological imbalance. Domestic scholars have summarized a series of irrational emotional issues that occur when emergencies happen, including hypochondria, panic, anxiety, depression, and compulsive psychology [6]. A 2020 survey on COVID-19 found that 35% of the public experienced obvious emotional stress responses [7]. However, current research mainly treats emotion as a 前置 factor affecting information behavior, with few discussions on the dynamic evolution of user emotions when influenced by information behavior, and lacks fine-grained descriptions of this interplay mechanism.

After the outbreak of a public health emergency like COVID-19, the public generates stronger information needs and triggers more frequent information behaviors [19]. Understanding the relationship between public emotions and information behavior during the pandemic in a timely manner is beneficial for helping relevant departments guide the virtuous cycle of public emotions and improve the quality and level of public opinion guidance. Therefore, this study aims to obtain first-hand data on public information behavior and emotional changes during the pandemic through semi-structured interviews, using thematic analysis, which can flexibly understand rich qualitative data, to extract themes that reflect the roles emotions play in user information behavior, thereby comprehensively depicting the interplay mechanism between public emotions and information behavior in the context of public health emergencies.

2 Research Design

This study adopts an exploratory qualitative research design. First, a semi-structured in-depth interview outline was developed around the research objectives. After conducting preliminary interviews with four master's students, the outline was refined and revised. The final version is shown in [Figure 1: see original paper].

Figure 1 Interview Outline

Formal interviews were conducted one-on-one. Researchers first explained the interview to respondents, obtained their consent, signed interview consent forms, and recorded the entire interview process. Interviews lasted 15-40 minutes, with researchers listening to subjective descriptions and using the interview outline to guide heuristic questioning, making adjustments as needed. During data collection and organization, secondary interviews could supplement unclear

concepts.

2.2 Interview Sample Selection Criteria

As China's most densely populated province and a transportation hub in the Yangtze River Delta, Jiangsu faced challenges in epidemic prevention and control due to frequent population movement. Jiangsu's overall epidemic situation was at an average level nationwide—neither as "very severe" as Hubei nor as "very mild" as Tibet—making it representative. Using convenience and purposive sampling, this study selected Jiangsu residents (those whose primary residence was in Jiangsu during the pandemic) as interviewees, recruited through networks and snowball sampling.

To ensure data quality, sample selection followed three principles: (1) **Homogeneity and heterogeneity**: Homogeneity considered that different epidemic situations across regions might affect results, so interviewees were limited to Jiangsu residents. Heterogeneity aimed to select samples from various occupations to ensure conclusions reflected different populations exposed to the pandemic. (2) **Typicality**: When COVID-19 broke out, public information behavior in cyberspace was frequent, so digital natives with high network exposure were selected. Based on common academic practice [21], age was set from 18 to 34, representing typical digital natives and reducing credibility issues from information literacy differences [22]. (3) **Comprehensiveness**: Referencing methods for determining data saturation in in-depth interviews, 15-25 participants were considered appropriate [23].

Interview data were collected from January 25 to May 5, 2021. The final sample included 32 Jiangsu residents (16 male, 16 female), aged 18-34, from cities including Nanjing, Yancheng, Zhenjiang, and Huai'an, with occupations spanning government institutions, enterprises, students, and self-employed individuals.

2.3 Thematic Analysis

After interviews, recordings were transcribed into text, forming 32 transcripts (P1-P32) totaling over 160,000 words. Researchers conducted inductive thematic analysis on the qualitative data. Following Braun and Clarke's [20] thematic analysis process, text was transformed into coded statements for theme generation [24].

First, two researchers read all interview texts repeatedly and discussed them briefly. Second, transcripts were divided into four groups of eight to facilitate saturation determination, using NVivo 12 software to standardize the analysis process. No new codes emerged during coding of the final group, indicating data saturation. Coding examples are shown in . Third, researchers independently evaluated and named core themes. Typically, a theme discussed by about 50% of samples qualifies as core, but this threshold could be adjusted [20] to prevent meaningful themes from being overlooked. Based on actual conditions, themes discussed by $ $14 interviewees were designated as core themes. Fourth,

researchers met to compare 97 codes generated from 511 reference points, reviewing whether preliminary themes could be merged into core themes, whether identified themes had distinctive features, and whether they had clear representativeness. Finally, both researchers reviewed and finalized theme names.

3 Thematic Analysis Results and Discussion

This study identified five themes and nine sub-themes regarding the interplay between emotion and information behavior during COVID-19. The five themes reveal that the pandemic triggered emotions that formed emotion clusters, driving information behavior through explicit and deep pathways, while information behavior also affected emotions: one-way information output behavior released emotions, and interaction factors and information characteristics during the behavior process influenced emotions differently.

3.1 Diverse Emotional Expressions During COVID-19

Referencing the "Dalian University of Technology Emotion Vocabulary Ontology," this study categorized emotion words mentioned by interviewees and classified emotional polarity based on interview context. The study found that public emotions during COVID-19 were intertwined with negative and positive emotions, coexisting with stress and regulation. When the pandemic broke out, public cognition and judgment of the event generated short-term emotional reactions, producing diverse emotion types. First, as a major public health emergency, COVID-19 seriously damaged public health, causing psychological stress and negative emotions such as worry, tension, and anxiety. For example, Interviewee 32 described COVID-19 as a national disaster: "afraid that everyone returning home for Spring Festival would spread the Wuhan epidemic nationwide"; Interviewee 9 stated that when infection numbers kept rising, "I felt tense inside"; Interviewee 17 said that when seeing news from Wuhan, "I felt anxious for them." In the epidemic prevention environment, some interviewees also reflected anxiety: "I would inexplicably feel my throat itching…a state of health anxiety (P04)." Other negative emotions mentioned included disappointment, regret, and sadness, as shown in [Figure 2: see original paper].

Figure 2 Emotions During COVID-19: Intertwined Negative and Positive, Coexisting Stress and Regulation

Despite negative emotions, many positive stories emerged from outbreak to control, demonstrating Chinese people's cohesion and resilience, which stimulated positive emotions. In the face of a public health emergency with predominantly negative emotional tones, positive events' emotions inhibited negative emotions' spread and regulated pessimistic perceptions. For example, admiration for medical staff (P05), admiration for China's speed (P25), and appreciation for government prevention work (P13). After effective control, the public gradually felt relieved and secure, generating excitement as Chinese citizens: "At that time, excitement basically occupied a large part—the perseverance and courage

demonstrated by Chinese people…gave a feeling that we had already won the war (P29)." Other positive emotions included being moved, happy, and proud (see [Figure 2: see original paper]).

Thus, when public health emergencies occur, public groups pay strong attention to events, and emotions change with event nature. Although COVID-19 posed great challenges, generating negative stress emotions, the united anti-epidemic efforts stimulated positive emotions, forming coexistence of negative stress and positive regulation.

3.2 Emotion as a Driver of Information Behavior

Existing research has made emotion an important dimension in information behavior studies. Emotions affect individuals' search willingness, persistence, and patience in information seeking [25]; their relationship with information sharing is also close: Dupré found that emotional content in information affects sharing willingness, and sharing motivation affects emotional privacy disclosure [27]. However, research on how emotions drive information behavior remains shallow. This study's interviews show that emotion drives public information behavior, including information seeking and sharing. Thematic analysis revealed two main pathways: explicit and deep driving.

3.2.1 Explicit Emotional Driving of Information Behavior Explicit emotional driving refers to emotions directly triggering motivations or cognitive needs that produce information behavior. Since interviewees could clearly express how emotions triggered motivations and needs, this is called "explicit" driving.

In explicit driving mode, emotions trigger behavioral motivations or cognitive needs, generating information behavior. First, as an internal communication and control system linked to motivation [28], Interviewee 9 described feeling "very excited when seeing news," generating motivation to "hope more people could see it," thus posting on social media; Interviewee 02, driven by worry, had motivation to "popularize knowledge with family" and shared information with them. Second, besides motivation, emotions trigger cognitive needs: Interviewee 23 felt "very worried" about Wuhan's epidemic, generating need to "know what exactly happened," thus searching news daily; Interviewee 17's tension drove need to "know how the epidemic would be resolved," leading to checking news or social media posts. In these cases, emotions (worry, tension) drove information needs, which then drove seeking and browsing behaviors. In explicitly driven information behavior, actors could directly describe what needs emotions produced, such as "a certain emotion (worry, tension) made me want to know what happened/how things were/how to protect myself," clearly articulating emotions and resulting information behavior needs.

3.2.2 Deep Emotional Driving of Information Behavior Deep emotional driving refers to emotions first developing into deeper feelings, evolving

into emotional needs that influence information behavior. Unlike emotions' instantaneous and situational nature, feelings develop, perfect, and transform through accumulation [29]. In this process, emotions extend into feelings, and emotional needs are expressed more implicitly.

Emotional needs are psychological, physiological, and material needs driven by feelings, representing emotional satisfaction and psychological identification [30]. Wilson's "Model of Factors Influencing Needs and Information Seeking Behavior" indicates emotional needs affect information seeking [31]. In this study, emotional needs after emotion deepening included seeking comfort, satisfying justice, gaining recognition, and producing spiritual pleasure. For example, Interviewee 10, moved by a medical worker's story, developed admiration and sought more stories to gain belief: "Wanting to learn more about him to strengthen my confidence, I searched because I admired him"; Interviewee 11 felt "heartbroken" about Wuhan's epidemic, and this empathy led to participating in sending messages to strangers from emotional need to "comfort each other and cheer each other on"; Interviewee 12, when feeling sad, powerless, and angry, was driven by social responsibility to share information, gaining emotional satisfaction: "In this information relay, even without many followers or viewers, doing it and leaving traces is better than doing nothing."

Unlike explicit driving, deep driving has weaker purpose and more implicit emotional needs that actors cannot easily identify. Notably, these driving modes are not exclusive and may coexist. For example, Interviewee 3's regret persisted, creating "necessary feeling" to forward information (deep emotional need) while also having explicit motivation to "cause social repercussions." Interviewee 6 saw news about Wuhan's material shortage, felt negative emotions (sympathy, sadness), and forwarded it on Weibo, explaining: "It's a help-seeking news; my purpose in spreading it is to let more people know and understand this situation, while also sharing my negative emotions." "Letting more people know" is explicit motivation, while "sharing negative emotions" reflects need for comfort—a deep emotional need. Thus, whether through explicit or deep driving, emotions play important roles in driving information behavior.

3.3 One-Way Information Output Regulates and Releases Emotion

After emotions drive information behavior, information behavior also affects emotions. The study found that one-way information output behavior can regulate and release emotions, positively impacting them. Interviewees mentioned information behaviors including information sharing, seeking, expression (posting on Weibo/WeChat), and interaction (liking, commenting). These behaviors are sometimes one-way and without feedback, such as posting without receiving interaction. Such non-interactive, one-way information behavior can still regulate emotions to some degree.

[Figure 3: see original paper] shows changes in emotions mentioned by interviewees regarding one-way information output. For example, Interviewee 6

shared negative COVID-19 news, believing "speaking out is a good way to vent emotions"; Interviewee 13 shared out of concern for friends, "making me feel less anxious"—this one-way sharing provided compensation, believing concern helped friends, thus relieving worry; Interviewee 12 liked others' posts, instantly feeling recognition that "reduced some negative emotions." Thus, information behavior itself is an emotional release, "a venting channel (P13)," beneficial for relieving negative emotions. One-way information behavior not only reduces negative emotions but also releases positive ones, such as "feeling more excited after commenting (P09)," "full of hope (P01)," and "feeling content (P31)."

Social safety valve theory [32] suggests that when society accumulates large amounts of negative emotions, establishing emotional release mechanisms for conflicts can ease social tensions. In this study, personal information behavior serves as an emotional release window, allowing emotions to be vented through information behavior. Therefore, one-way information behavior can be seen as an emotional "safety valve," an outlet for emotional energy release, thus easing public negative emotional tendencies in public emergencies.

3.4 Interaction Behavior of Information Behavior Subjects Affects Emotion

Besides non-interactive one-way output, most information behavior involves subject interaction, such as others' feedback, searched information, and perceived public opinion atmosphere during behavior. The study found that three types of interaction affect user emotions: between subjects, between subjects and public opinion, and between subjects and information.

3.4.1 Inter-Subject Interaction Has Functional Effects on Emotion In information exchange, the public can perceive each other's emotions, understand viewpoints, and exchange opinions [33]. Interviewees mentioned information exchange including receiving likes/comments after expression, discussing after sharing, and behavioral feedback after sharing. These exchanges provide bidirectional, social interaction that drives emotions toward positive development, having functional effects [34].

First, information exchange relieves negative emotions. Interviewee 7 felt calmer after "rational discussion" following sharing; Interviewee 23 felt relieved after receiving good news from friends; Interviewee 2 felt negative emotions relax after family responded "got it" and "started wearing masks." Second, exchange also enhances positive emotions. Interviewee 9 felt "more excited" after receiving agreement on posted viewpoints; sharing exchanges also enhanced happiness and pride: "Increasingly feeling life is good now, living in this era is good (P03)." Overall, inter-subject interaction positively guides emotions, relieving negative emotions and strengthening positive ones.

3.4.2 Subject-Public Opinion Interaction Perception Causes Emotional Fluctuation Public opinion is the most original expression of people's

cognition, attitude, emotion, and behavioral tendency, requiring no majority agreement. It is a simple collection of various emotional opinions with emotional contagion [35]. During COVID-19, the public perceived emotional opinion collections within their social radius (e.g., emotional atmosphere in comment sections, family emotions), forming independent perceived public opinion. Given the event's suddenness, short-term emotional reactions occurred when understanding events, fluctuating through interaction with perceived public opinion.

When seeing public opinion consistent with their emotions, some interviewees felt original negative emotions relieved: "Made me feel less lonely, powerlessness was relieved (P12)"; "Feeling everyone was working hard relieved anxiety (P09)." Others felt negative emotions strengthened: "Felt more trapped, more uncomfortable (P06)." This strengthening wasn't limited to negative emotions—positive emotions also intensified: "Created a feeling of everyone united in struggle (P07)"; "Everyone feeling things were getting better step by step gave me more confidence to fight the epidemic (P01)." Additionally, new positive emotions emerged: "So many people thought like me, felt beautiful (P31)"; "When everyone felt regret for him, there was some comfort (P12)." When public opinion's emotional attributes were inconsistent with one's own, strong emotional fluctuations occurred, generating new anger (P07) or strengthening existing negative emotions like anger and regret (P12).

Thus, different perceived public opinion during information behavior caused emotional fluctuations based on consistency with one's own emotions. These changes reflect emotional contagion, a common phenomenon in interpersonal communication [36]. Primitive emotional contagion theory suggests that when individuals detect emotional information, they unconsciously synchronize and imitate, getting infected by detected emotions when different. This study further found that when detected emotions were consistent, original emotional intensity fluctuated—reducing or strengthening original emotions, even generating new ones—extending primitive emotional contagion theory.

3.4.3 Subject-Information Interaction Relieves Negative Emotions
The study found that during information use, subject-information interaction can reduce negative emotions to some extent. Interviewee 6 stated that "understanding more about the epidemic made me more at ease"; Interviewee 9 said that increasingly comprehensive information resources "had a soothing effect," and "as mastery of the situation deepened, anger and sadness gradually became rational." Thus, during information interaction, the public filled cognitive gaps to some extent, reducing unknown fears and becoming more rational. Unknownness causes fear and anxiety [37], and information interaction can relieve negative emotions by eliminating cognitive deficiencies.

3.5 Information Characteristics Are Important Factors Causing Emotional Change

Section 3.4.3 showed that the dynamic interaction process affects emotions. Additionally, differences in information quantity, form, and content also trigger different emotional reactions. This theme focuses on how information characteristics themselves affect public emotions.

3.5.1 Information Quantity Is One Factor Influencing Emotional Change During the pandemic, the public was exposed to a complex information space. In the early stage when the situation was unclear, information insufficiency increased tension and anxiety: "When some content felt lacking, I became more tense and anxious because I felt the information I received wasn't within my desired scope (P24)." Information deficiency caused unknown fear, which was stronger than receiving negative news: "Unknownness is most terrifying—you don't know the current situation, which is scarier than directly seeing daily new case numbers (P26)." After obtaining sufficient desired information, adequacy relieved negative emotions: "Searching for more information would relieve worry (P07)"; "Information adequacy makes things more transparent…if I can directly feel the progress, it slightly soothes my emotions (P09)." When the pandemic surged, some entered information overload, feeling numb: "I felt overloaded, like those help requests were hard to verify…felt numb, couldn't process all this information (P08)," even becoming more anxious: "When Wuhan cases increased dramatically, but I couldn't help with much of this news, it affected my emotions (P02)." Thus, information quantity is an important factor affecting anxiety and tension, showing an inverted U-shaped relationship. Information deficiency, common during emergencies, causes uncertainty and information anxiety [38], generating negative emotions. As information increases, known events create security [40], gradually relieving negative emotions. Only when effective information reaches an appropriate threshold are negative emotions greatly released. Beyond that, overload causes burnout and emotional exhaustion [41], even interfering with normal life.

3.5.2 Information Form Affects Emotional Arousal Speed and Intensity During COVID-19, different information forms (text, images, video, data) spread online. The study found that emotional arousal speed and intensity varied by form. Video was considered "no need for imagination" and "directly intense," thus most likely to trigger emotions with greatest intensity. Video also made emotions more continuous and infectious (P31). Compared to text, images had more "visual impact," thus "easily causing emotional changes (P05)." Both images and videos increased perceived credibility to some degree: "P(P)S videos or images are definitely harder to fake than text," thus affecting emotional change degree. For pure text, reading was considered more rational: "Because reading reception is slower. When reading text, I add my own thinking, calming down while reading (P24)."

3.5.3 Emotional Cue Words Are a Double-Edged Sword Emotional cue words are vocabulary with distinct emotional colors that determine information's emotional tone. The study found that cue words don't easily guide public emotions and may even backfire. First, the public "unconsciously gets influenced by (cue words)," especially repeated or 刷屏 cue words like danmu (bullet comments), which intensify emotional reactions: "Seeing words like 'tearful' in China anti-epidemic map danmu, I even cried (P29)." However, not everyone is led by cue words: "If I find discrepancies between (cue words and actual content)," emotions won't change. Besides comparing content with cue words, comparison with one's own emotions matters: "If (cue words) match your emotions, they may strengthen; if different, they won't affect you (P10)." Some expressed 反感 toward cue words, suspecting information authenticity: "Suspect clickbait (P21)"; "I personally dislike titles with exaggerated emotional cue words and don't want to click them (P30)." Thus, information quantity, form, and cue words are external stimuli during information behavior. According to Stimulus-Organism-Response (SOR) theory, when individuals receive stimuli (S) from information quantity, form, and cue words, the organism (O) generates emotions, triggering responses (R) [42]—emotions being led, becoming more objective, or generating 反感—thus emotions change.

3.5.4 Subjective Perceived Credibility Causes Emotional Change Typically, when the public feels information contradicts reality, they engage in information avoidance [43] to prevent negative emotions from intensifying and maintain original emotional levels [44]. However, this study found that after encountering information considered unreliable, emotions still changed. Perceived credibility refers to information recipients' judgment of information truthfulness, emphasizing subjective perception rather than objective credibility. Interviewees expressed that even information they didn't believe would cause emotional fluctuations, even anxiety (P32), 质疑 (P12), or anger (P07). This can be explained by the Information Processing Theory of Emotion [45], where processing external information triggers recoding of stored memory information. When unreliable information contradicts internal cognitive models, emotional changes occur. Moreover, the study found that for information authenticity, the public's subjective judgment more strongly affects emotional reactions. If negative false information spreads, even discerning audiences are affected by its negative emotions, though false information may later be debunked, it still causes emotional fluctuations during dissemination.

4 Interplay Model of Information Behavior and Emotion

Based on the above themes, this study constructed an Interplay Model of Information Behavior and Emotion during public health emergencies to comprehensively and fine-grainedly describe emotion's role in information behavior, as shown in [Figure 4: see original paper].

Figure 4 Interplay Model of Information Behavior and Emotion

Emotion and information behavior have a mutually influential relationship. In Theme 1, during public health emergencies, the public experiences "intertwined positive and negative emotions, coexisting stress and regulation," forming emotion clusters. These emotions awaken cognitive needs and motivations while vertically developing into feelings and emotional needs, driving information behavior as a "driver" (Theme 2). During information behavior, Theme 3's one-way information output behavior serves as a "safety valve," providing an outlet for emotional release, relieving negative emotions, strengthening positive emotions, and effectively regulating emotions as a "regulated party." Simultaneously, information behavior involves interactions between subjects, between subjects and public opinion, and between subjects and information, demonstrating emotions as "affected parties" during interaction. Information characteristics also affect emotional changes, with emotions as "changed parties" undergoing various changes: negative emotions weakening or strengthening, positive emotions strengthening, and new emotions emerging (Themes 4 and 5). Macroscopically, throughout theme connections, emotion both influences and is influenced in the interaction, constituting the "initial emotion-information behavior-emotion change" interplay process.

5 Implications and Future Directions

This study explored three questions: how public emotions manifested during COVID-19, how emotions and information behavior interacted, and whether other information factors affected emotions. Using inductive thematic analysis, it fine-grainedly examined the interplay and emotion's roles. Theoretically, it enriched emotion research in information behavior, finding that during public health emergencies, positive and negative emotions are intertwined, with emotion existing as driver, regulated party, affected party, and changed party in the "initial emotion-information behavior-emotion change" process. Practically, findings help the public rationally view emotional changes, engage in beneficial information behavior, and timely improve pandemic-related emotional issues. They also help relevant departments understand information characteristics' effects, improve information release mechanisms, control information quality, and provide basis for major epidemic crisis management strategies. Insights include:

1. **Parallel negative emotion relief and positive emotion dissemination**: Most research focuses on controlling negative emotions while ignoring positive ones. Positive emotions indicate aspirations for a better life, enhancing confidence to overcome epidemics and mobilizing public enthusiasm. Therefore, besides controlling negative emotions, positive emotions should be valued, generating security and optimism. Combining positive dissemination with negative relief more effectively regulates public emotions.

2. **Promote public information behavior and social interaction**: After public health emergencies, relevant departments can appropriately promote social interaction during epidemics, making the public willing to

express and interact, ensuring everyone receives responses after voicing authentic opinions, guiding emotions toward positive development.

3. **Align with demand focus and control information quantity**: Mainstream media should align information supply quantity with public demand, dynamically adjusting supply to meet needs while preventing information overload's negative emotional effects.

4. **Use information forms and emotional cue words rationally**: Information form is crucial for online emotional transmission speed and infection intensity. Different content should use appropriate forms: important notices should use calming pure text; factual statements should use persuasive images and data charts; emotion-evoking content should use video for greater impact. Cue words can guide emotions and enhance dissemination but should be used moderately to prevent 逆反 emotions and loss of opinion leadership.

5. **Ensure information authenticity and quality**: Subjective perceived credibility affects emotional reactions, and even disbelieved information triggers emotions. Therefore, departments should strictly control information quality: improve perceived credibility of authentic information by timely releasing authoritative information with evidence to gain dominance; for false information, block dissemination immediately and improve authority and timeliness of debunking platforms to become trusted primary sources.

Limitations: First, sample characteristics could include those aged 35+ or further subdivide occupations (e.g., medical vs. non-medical workers). Second, self-report interviews are limited by memory. A severe COVID-19 outbreak occurred in Jiangsu in July 2021, after data collection, representing a limitation. Future research will deepen interviews, refine questions, consider different ages and occupations, further verify the interplay, and enrich information behavior theory.

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Author Contributions

Xie Yushan: Designed interview protocol, collected and processed interview data, wrote and revised the paper; Ke Qing: Proposed research ideas, designed interview protocol, finalized and revised the paper; Wang Xiaoyu: Implemented research protocol, collected and processed interview data; Qin Qin: Designed interview protocol, finalized and revised the paper.

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A Thematic Analysis of the Relationship Between Emotion and Information Behavior and the Role of Emotion Under the Context of COVID-19

Abstract: [Purpose/Significance] When public health emergency occurs, public emotion problems become particularly complex. Exploring the roles of emotions in public information behaviors under public health emergencies helps relevant departments understand the changing characteristics of public emotions and the interactive effects between emotions and information behaviors, in order to improve response capacity to such crisis emergencies and slow down the psychological harm of the epidemic to the public. [Method/Process] Through semi-structured interviews with 32 members of the public, the thematic analysis method was used to extract themes regarding "the interplay between public emotion and information behavior" during the COVID-19 pandemic and to identify the roles of emotion in this interplay. [Result/Conclusion] The study found that during the COVID-19 epidemic, on the one hand, the public's positive and negative emotions are intertwined to form an emotion group, which drives

information behaviors in both explicit and deep ways. On the other hand, information behaviors also affect emotions: one-way information output behavior is a way to release emotions, and external interaction factors and information characteristics in the behavior process will change emotions. This paper finally establishes an interplay model of information behavior and emotion, identifies the role of emotion in the process of "initial emotion-information behavior-emotion change," and provides some enlightenment for relevant departments in dealing with public health emergencies.

Keywords: Emotion; Information Behavior; Thematic Analysis Method; COVID-19

Note: Figure translations are in progress. See original paper for figures.