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Online Social Support as an Important Resource in Navigating Major Public Health Emergencies: A Qualitative Study

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ABSTRACT: Objective: During major public health emergencies, lockdown and home quarantine measures restrict in-person interaction, making online social support an important means of sustaining social connection. Using the COVID-19 pandemic as a representative case of such emergencies, this study explores the content, functions, and influencing factors of online social support, aiming to inform the delivery of targeted psychosocial services. **Methods:** A qualitative study was conducted with semi-structured in-depth interviews among 20 young Chinese adults who had experienced online social support during the COVID-19 pandemic. Thematic analysis, facilitated by NVivo software, was undertaken to identify, analyse, and report key themes regarding the content, functions and influencing factors of online social support amid the pandemic. **Results:** Online social support comprised two components: problem-solving support (e.g., official pandemic updates and treatment guidelines, and proximity-based matching of medicines and daily necessities) and empowering support (e.g., peer encouragement and companionship within online mutual-aid groups and game communities). Its positive functions included maintaining daily routines, alleviating negative emotions, enhancing psychological comfort, and facilitating adaptive adjustment; it also exerted negative effects, such as aggravating negative emotions and inducing a sense of being disturbed. The influencing factors comprised situational, interpersonal interaction, personal traits, and online engagement characteristics. **Conclusions:** During major public health emergencies, online social support may serve as an important resource for sustaining daily functioning and promoting mental health, complementing offline support. These findings highlight the need for official-led, multi-stakeholder integrated online social support systems that provide both problem-solving support and empowering support.

KEYWORDS: Online social support; qualitative research; thematic analysis; major public health emergencies

1 Introduction

Major Public Health Emergencies, such as the COVID-19 pandemic, represent profound crises with enduring impacts that extend far beyond the acute phase. These events not only severely threaten individuals' physical health but also drastically disrupt social routines, triggering a range of negative psychological responses including depression, fear, anxiety, loneliness, and sadness [1].

Social support serves as a critical protective factor for public mental health, and the development of social support systems constitutes a core component of mental health work [2]. However, amid major

public health emergencies, the rapid human-to-human transmission of the virus, prolonged social isolation, and limited healthcare resources significantly reduced traditional face-to-face interactions. Consequently, the internet emerged as an important channel for social interaction and accessing social support [3].

Online social support refers to internet-facilitated emotional, informational, instrumental, and companionship support obtained through interpersonal interactions, organizational services, and various digital platforms. Some researchers argue that online platforms can provide social support comparable to that obtained in face-to-face contexts [4]. Online social support possesses unique advantages: it transcends time and geographical constraints, is cost-effective, allows for anonymity, enables broader social connections [5], and most importantly, is well-suited for scenarios where face-to-face support is unavailable—such as social isolation [6]. While previous studies have extensively explored online social support related to individual stressors [7], limited attention has been paid to its characteristics in public health emergencies [8]. As a key coping strategy during major public health crises, the content, functions, and influencing factors of online social support warrant in-depth investigation.

Existing research on the content of online social support during major public health emergencies has yielded inconsistent findings. For example, one study identified five types of online social support exchanged among the public during COVID-19—instrumental support, esteem support, informational support, emotional support, and companionship support—through web scraping and content analysis of Baidu data [9]. In contrast, another study found that individuals obtained informational, emotional, and peer support from health-related information shared on social media [10]. These discrepancies may stem from differences in the study-specific pandemic phases, research methodologies, and other contextual factors. Qualitative research methods excel at describing and understanding human experiences and behaviors from the perspective of individuals within specific contexts. Thus, qualitative studies focusing on online social support throughout the entire pandemic can offer a more comprehensive perspective on this topic and provide guidance for policy formulation and targeted assistance at the public policy level.

Regarding the functions of online social support during major public health emergencies, most research emphasizes symptom reduction or stress buffering. Qi et al. [11] found that adolescents with higher levels of social support exhibited a lower prevalence of mental disorders during the COVID-19 pandemic. Another survey also revealed an association between perceived greater online social support and a reduced likelihood of experiencing psychological distress [12]. However, existing literature insufficiently addresses how online social support contributes to maintaining psychological functioning, daily stability, and adaptive capacity under prolonged crisis conditions. A nuanced understanding of these promotive processes is essential. This not only provides a theoretical foundation for future in-depth research, but also offers practical insights for delivering effective and targeted psychosocial services during public health emergencies.

Previous studies on the influencing factors of online social support have predominantly focused on general contexts, with scarce attention paid to the factors that shape online social support during major public health emergencies. In general settings, personal traits and interpersonal relationships have received significant attention as predictors of seeking online social support. For instance, the number of Facebook friends has been shown to play a significant role in predicting perceived social support [13]; extraverted individuals tend to excel at offline socialization, while introverted individuals may use social networks as a substitute for real-world interactions [14]; and individuals with high neuroticism report lower levels of offline social support, which may lead them to seek support online [15]. Studies indicate that the manifestation of online social support varies across contexts [16], and major public health emergencies represent a critical context closely linked to human physical and mental health. Therefore, identifying the influencing factors of online social support during the COVID-19 pandemic is essential. It provides a theoretical foundation

for building resilient, digital psychosocial support systems, which signals a critical shift from reactive crisis management to the proactive construction of psychosocial safety nets.

Given the exploratory nature of this study, a qualitative approach using thematic analysis was adopted. The research aims to identify core themes pertaining to the content, functions, and influencing factors of online social support during major public health emergencies, and to provide a conceptual framework for psychological assistance practices.

2 Methods

2.1 Participants

In June 2023, recruitment notices were posted on two major Chinese social media platforms, WeChat and QQ, and participants were recruited via convenience sampling. Inclusion criteria: (1) Having been infected with COVID-19; (2) Having experienced online social support during the pandemic; (3) Aged 18 years or older. Exclusion criteria: (1) Suffering from severe mental illness (judged by participants' self-report questionnaires); (2) Having suicidal ideation (judged by participants' self-report questionnaires). The sample size was not predetermined at the outset of the study [17]. Only minor refinements to existing codes were required after the 18th interview, and no new codes or themes emerged from the 19th and 20th interviews, indicating data saturation. Two independent coders cross-checked the coding outputs and confirmed through team discussion that the core thematic structure had stabilized [18]. Therefore, 20 participants who voluntarily agreed to participate in the interviews comprised the final study sample, and their basic information is presented in Table 1. The sample includes 7 males (35.0%) and 13 females (65.0%). Participants' ages ranged from 19 to 37 years ($M = 23.85$, $SD = 4.91$). In terms of educational level, 14 participants were undergraduates (70.0%) and 6 were postgraduates (30.0%). Occupational backgrounds were distributed as follows: 13 students (65.0%), 3 teachers (15.0%), 1 civil servant (5.0%), 1 lawyer (5.0%), 1 internet operations practitioner (5.0%), and 1 public institution staff member (5.0%). The study was approved by the Ethics Committee of Central China Normal University (IRB No. CCNU-IRB-202312016b). Prior to the interviews, all participants were informed of the study purpose, confidentiality arrangements, and their right to withdraw, and they provided written informed consent. All participants received CNY 30 compensation after completing the interviews.

Table 1: Basic information of the participants.

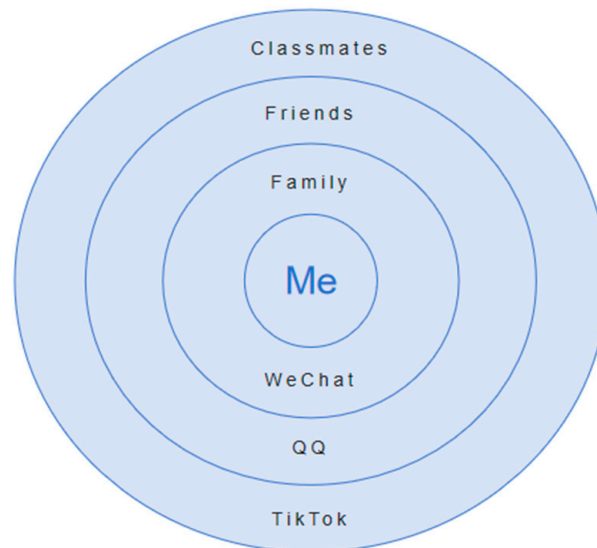
ID	Gender	Age	Occupation	Education Level	Region	Main Platforms Used	Interview Mode
a1	Female	20	Student	Undergraduate	Hubei	WeChat	Offline
a2	Male	21	Student	Undergraduate	Hubei	TikTok, Game for Peace	Offline
a3	Female	20	Student	Undergraduate	Hubei	WeChat, QQ	Offline
a4	Female	25	Student	Postgraduate	Beijing	WeChat, TikTok	Online
a5	Female	26	Student	Postgraduate	Guangdong	WeChat, Rednote	Online
a6	Female	34	Teacher	Undergraduate	Sichuan	WeChat	Online
a7	Male	25	Teacher	Postgraduate	Sichuan	Bilibili	Online
a8	Female	29	Teacher	Undergraduate	Hebei	WeChat	Online
a9	Female	21	Student	Undergraduate	Hebei	WeChat, TikTok, Honor of Kings	Online
a10	Male	20	Student	Undergraduate	Shaanxi	WeChat, Rednote	Online
a11	Female	25	Civil Servant	Postgraduate	Anhui	WeChat, Rednote	Online
a12	Male	37	Lawyer	Undergraduate	Beijing	WeChat, Lark	Online
a13	Female	26	Internet Operations	Postgraduate	Beijing	WeChat, Lark	Online
a14	Female	20	Student	Undergraduate	Jilin	WeChat, TikTok	Online
a15	Female	26	Public Institution	Postgraduate	Liaoning	WeChat, QQ, Honor of Kings	Online

Table 1: *Cont.*

ID	Gender	Age	Occupation	Education Level	Region	Main Platforms Used	Interview Mode
a16	Male	19	Student	Undergraduate	Sichuan	WeChat, Honor of Kings	Online
a17	Male	21	Student	Undergraduate	Jiangxi	WeChat	Online
a18	Female	21	Student	Undergraduate	Shandong	WeChat, QQ, TikTok, Honor of Kings	Online
a19	Female	20	Student	Undergraduate	Guangxi	WeChat, QQ	Online
a20	Male	21	Student	Undergraduate	Hunan	WeChat	Online

2.2 Semi-Structured Interview Instruments

A one-on-one semi-structured in-depth interview approach was adopted. To elicit participants' subjective experiences of online social support during the pandemic and enrich the depth of interview content, the study referenced the ecogram developed by Dam et al. [19] to create a Social Support Network Diagram (Fig. 1), which participants completed prior to the interview. Specifically, participants were instructed to: write in the innermost circle (closest to "Me") the individuals/platforms/organizations that provided very frequent online social support during the pandemic; write in the middle circle those that provided regular online social support during the pandemic; write in the outermost circle those that provided occasional online social support during the pandemic.

**Figure 1:** Social support network diagram (example).

Prior to formal data collection, the research team (1 doctoral supervisor, 3 doctoral students in psychology, and 1 master's student in psychology) developed a preliminary interview guide through group discussions, focusing on "experiences of online social support during the pandemic." A pilot study was conducted with four participants, and the four sets of pilot interview data were excluded from the final analytical sample. The interview guide was iteratively revised and supplemented multiple times based on pilot feedback and team discussions (e.g., simplifying complex terminology, merging similar questions) to form the final version (Appendix A). During formal interviews, participants first filled out the Social Support Network Diagram. Interviewers then conducted the interview in accordance with the diagram information provided by participants and the interview protocol.

2.3 Data Collection and Analysis

Interview times and locations were arranged to accommodate each participant's convenience, with 3 interviews conducted face-to-face and 17 via online video. Both interviewers were graduate students specializing in clinical and counseling psychology, with no prior relationships between any interviewer and participants. Each interview lasted 30–60 min. With participants' consent, all interviews were audio-recorded and transcribed verbatim by transcribers who strictly adhered to confidentiality principles, resulting in a final transcript of 103,000 Chinese characters.

Data analysis followed a thematic analysis approach [20] and was assisted by NVivo 12.0 software. Two coders coded all raw data separately. Upon completion of independent coding, the two coders compared their codes, identified discrepancies, and resolved disagreements through discussion until consensus was reached. For unresolved disagreements, another doctoral student from the research team was invited to participate in group discussions to finalize the coding. Specifically, the analytical process proceeded in three core stages. First, meaningful text segments relevant to online social support during the pandemic were identified across the transcripts, and representative quotations were selected as reference points. All preliminary reference points were confirmed through group deliberation, generating a total of 510 reference points. Second, the two coders independently clustered initial codes with shared semantic meaning into preliminary subthemes, grouping conceptually related content to organize fragmented data into coherent thematic units. Following team discussion, 4 subthemes were finalized under the domain of support contents, 18 subthemes under the domain of support functions, and 21 subthemes under the domain of influencing factors. Third, the two coders further synthesized, refined, and named the subthemes within each domain to construct higher-order overarching themes. After iterative verification to ensure internal coherence and clear conceptual boundaries, 2 overarching themes were ultimately identified for support contents, 5 for support functions, and 4 for influencing factors.

Given that all raw interview data and research findings were documented in Mandarin, researchers conducted forward-backward translation of the original Chinese transcripts during the translation process. The translated texts were then proofread by a psychology doctoral student before undergoing bilingual expert review to ensure semantic, conceptual, and cultural equivalence of participants' narratives.

2.4 Research Trustworthiness

Trustworthiness was used to evaluate the quality of the qualitative research. Coding results were repeatedly discussed and reviewed by two coders and adjusted based on suggestions from two professors—one with extensive clinical experience who engaged in psychological interventions for public health emergencies, and the other with rich experience in qualitative research—to ensure both the professional rigor and contextual relevance of the coding. Additionally, member checking was employed to test trustworthiness [21]. A summary of the core themes and key coding outcomes was shared with each participant, who was invited to review whether the findings accurately reflected their lived experiences of online social support throughout the pandemic. All participants confirmed that the identified themes aligned with their personal experiences.

3 Results

The study ultimately identified 2 themes within the support contents dimension, 5 themes within the support functions dimension, and 4 themes within the influencing factors dimension, with detailed information presented in Table 2.

Table 2: Coding results of online social support.

Analytical Domains	Theme	Sub-Theme	Number (Frequency)
Content	Problem-Solving Support	Informational Support, Instrumental Support	18 (86)
	Empowering Support	Emotional Support, Companionship Support	18 (53)
Functions	Maintaining Daily Routines	Ensuring Orderly Daily Life, Ensuring Orderly Academic Life, Ensuring Orderly Work	18 (83)
	Alleviating Negative Emotions	Panic, Loneliness, Emptiness, Distress, Stress	15 (50)
	Enhancing Psychological Comfort	Sense of Peace of Mind, Relaxation, Subjective Well-Being, Sense of Certainty	13 (31)
	Facilitating Adaptive Adjustment	Improving Collective Efficacy, Diverting Attention, Discovering Universality, Changing Future Plans	8 (22)
	Negative Effects	Aggravating Negative Emotions, Being Disturbed	6 (8)
	Situational Factors	Pandemic-related emotional distress, Being in a Special Pandemic Phase, Feeling Boredom and Emptiness, Encountering Unsolvable Practical Problems, Privacy, Spatial Distance	19 (80)
		Evaluation of Supporters' Ability to Provide Support, Closeness of Relationship, Number of Close Friends, Considering Others, Conflicts with Supporters	
		Socially active, Independence, Prone to worry, Preference for Confiding in Others, Curiosity, Caution, Optimism	
Influencing Factors	Interpersonal Interaction Factors	Preference for Confiding in Others, Curiosity, Caution, Optimism	14 (32)
	Personal Traits Factors	More socially active online, Media Literacy, Preference for Online Support-Seeking	12 (20)

Note: Numbers in the last column of the table refer to the number of participants who mentioned each code. Figures enclosed in parentheses stand for the total frequency of mentions.

3.1 Content of Online Social Support

The content of online social support during the pandemic included problem-solving support and empowering support, with problem-solving support being mentioned more frequently by participants.

3.1.1 Problem-Solving Support

Problem-solving support refers to support that helps individuals address practical difficulties, including informational support and instrumental support.

Informational support refers to obtaining information, advice, or guidance through the internet. It permeated the entire pandemic period and included acquiring COVID-19-related health knowledge, understanding pandemic dynamics, receiving academic assistance, gaining life experiences, and obtaining work guidance. Among these, acquiring COVID-19-related health knowledge and understanding pandemic dynamics were the primary contents of informational support, including the prevention and treatment of COVID-19 and the development of the pandemic. For example, "I unfortunately contracted COVID-19 and had to search for treatment plans" (a7), "Everyone would exchange experiences about the symptoms after being infected and ways to alleviate them" (a15), and "I usually paid close attention to information related to COVID-19 prevention, trying to avoid getting infected if possible, or delaying it as much as possible" (a2). Such information enabled individuals to more actively assess health risks and manage health issues.

Instrumental support refers to obtaining substantive assistance through the internet, including medical supplies, daily necessities, and money. For instance, "During the pandemic, when supplies were scarce, we obtained material support from people from all over through the internet, alleviating the problem of food

shortages” (a19), and “If you needed to buy medicines like ibuprofen, you could post a message in WeChat groups to see if any group members could help inquire about them” (a4).

3.1.2 Empowering Support

Empowering support refers to enabling individuals to cope with difficulties through companionship, support, and encouragement, including emotional support and companionship support.

Emotional support was the most frequently mentioned type of empowering support by participants, referring to the expression of emotions and feelings in online interactions. It included care and greetings from others, active listening, support and encouragement, and a small number of participants ($n = 3$) mentioned professional psychological help. Care and greetings were the most common content of emotional interactions during the pandemic, focusing on themes such as “the development of the pandemic in the local area”, “whether one had been infected,” and “physical recovery after infection.” A small number of participants ($n = 2$) also inquired about mental health status and life-related issues. Interacting with family, friends, and netizens through social media—listening to and encouraging each other—made individuals feel part of a group, reducing loneliness and enhancing a sense of belonging.

Companionship support involves accompanying others online, completing activities together. The main companionship support mentioned by participants came from playing online games and online communities, followed by online chats (one-on-one or group chats) and online activities. Completing recreational activities online together supplemented individuals’ communication needs for maintaining social connections and reduced social isolation.

3.2 Functions of Online Social Support

The study found that the positive functions of online social support were reflected in maintaining daily routines, alleviating negative emotions, enhancing psychological comfort, and facilitating adaptive adjustment, while it also had certain negative effects. Throughout the pandemic, the role of online social support in maintaining daily routines was most frequently mentioned by participants.

3.2.1 Maintaining Daily Routines

The sudden outbreak and long-term persistence of the pandemic disrupted the predictability and structure of individuals’ daily lives, and online social support helped participants reconstruct a sense of order and control amid this disruption. This function was mainly achieved through informational support and instrumental support, and was reflected across three domains of daily functioning. In terms of daily life, individuals obtained information about the purchase of daily necessities and medical supplies, as well as pandemic-related prevention and treatment guidance, through the internet. This access helped keep basic needs met and reduced uncertainty about how to respond to the crisis, thereby allowing individuals to retain a sense of agency over an otherwise unpredictable situation. For example, “Getting access to vegetable purchase channels through community group chats or friends, and being able to buy what I needed, gave me a sense of reassurance” (a8). In terms of study, online communication with classmates and teachers, along with access to official school information, enabled continuity of academic routines despite physical isolation, helping students preserve a sense of normalcy and role continuity during a period when most external structures had been disrupted. For example, “Staying in touch with my classmates online made me feel that I was still connected to my university, which allowed me to continue my studies according to the school’s requirements” (a5). In terms of work, online communication with colleagues and superiors sustained team collaboration, which not only kept work processes functioning but also helped individuals maintain their

professional identity and daily rhythm at a time when the broader social routine had collapsed. For example, “During that period, we completed several important projects through online communication” (a13).

3.2.2 Alleviating Negative Emotions

An overwhelming majority of participants ($n = 15$) mentioned that online social support alleviated negative emotions during the pandemic, including relieving loneliness, distress, stress, emptiness, and panic. Due to fear of the unknown and uncertainty, panic was more common in the early and late stages of the pandemic (after the relaxation of restrictions); emptiness and loneliness were more common during periods of restricted activities and home quarantine; stress and distress existed in varying degrees throughout the pandemic in a diffuse form. Online social support could alleviate these negative emotions. For example, “When you seek help from others, sometimes they can’t solve the substantive problem, but as long as you know they are there, you will feel supported, accepted, and accompanied. This feeling is very good and can relieve some negative emotions” (a6).

3.2.3 Enhancing Psychological Comfort

A considerable number of participants ($n = 13$) stated that online social support could enhance psychological comfort, including increasing a sense of reassurance and relaxation, improving subjective well-being, and enhancing a sense of certainty. From being unfamiliar with COVID-19 to gradually understanding it, the accumulation of information provided individuals with a sense of security and confidence to cope, as well as more certainty. For example, “Learning about COVID-19, including knowledge obtained from the media, makes you feel more secure” (a5). In addition, mutual sharing and consolation, as well as the use of social media or game platforms, brought individuals a sense of relaxation and pleasure.

3.2.4 Facilitating Adaptive Adjustment

Facilitating adaptive adjustment was reflected in recognizing universality, enhancing collective efficacy, diverting attention, and changing future plans. “I am not alone” was a frequently mentioned feeling. When individuals connected with others with similar experiences through the internet, they realized that they were not the only ones facing current difficulties, which provided psychological comfort, generated a sense of community, and increased confidence in overcoming the pandemic. For example, “Thinking that I couldn’t go out to play, my physical condition was poor every day, and many of my plans were disrupted, I would feel upset. But seeing that everyone was in the same situation, and there were many people worse off than me, I felt comforted” (a15). At the same time, seeing the efforts of the government, medical staff, volunteers, and other parties, as well as successful cases of others overcoming the virus through social media, increased individuals’ confidence in overcoming the pandemic and courage in facing it. For example, “Seeing others successfully get through it, I felt more confident in coping” (a13), and “Thinking that they provided such strong support for us to get through the difficulties, I felt more confident and could further feel the strength of China” (a11). A subset of participants ($n = 2$) also stated that the process of seeking support was a process of diverting attention. One participant mentioned that the pandemic changed his career plan. Before the pandemic, he planned to develop in a big city, but the support and companionship of his family during the pandemic brought them closer, so he decided to work in a city closer to his family in the future.

3.2.5 Negative Effects

Several participants ($n = 6$) indicated that in addition to positive functions, online social support also had negative effects. Exposure to negative information on social media or failing to receive expected support

could exacerbate negative emotional states. For example, “Like when I call the community office, the line is always busy with so many people trying to get through. I can’t reach anyone, and I just feel so helpless” (a2). “Sometimes when I ask others for help, the support they offer can be rather perfunctory or useless, which only adds to my frustration” (a6). “During the pandemic, there was an overwhelming amount of information online, but you had no way of telling what was true and what was false. Some of the information was quite alarmist... It stirred up a great deal of anxiety and helplessness” (a13). One participant also mentioned that receiving too much information made him feel disturbed. “Sometimes their attempts to comfort me actually get on my nerves... they just keep bombarding me with non-stop messages” (a17).

3.3 Influencing Factors of Online Social Support

The influencing factors of online social support refer to various factors that shape individuals’ support-seeking behavior. According to the study results, four factors influenced individuals’ seeking of online social support: situational factors, interpersonal interaction factors, personal traits factors, and online engagement characteristics.

3.3.1 Situational Factors

Situational factors were the most frequently mentioned influencing factors. Individuals were more willing to seek help in the following situations: when experiencing negative emotions such as low mood, panic, and anxiety due to the impact of the pandemic. For example, “Affected by the pandemic, I was in a low mood. In this case, I would complain to my best friends, saying that I felt very bored” (a3); when encountering practical problems that they could not solve. For example, “When there was a shortage of vegetables at home or some medicines were needed, I would take the initiative to ask about purchasing channels in community groups or from family and friends around me” (a1); during specific stages of the pandemic, such as being confined at home or school, or being infected with COVID-19. “Being confined to school was quite difficult. For example, if there was a suspected case or a close contact in our building, I would feel worried and talk to my parents and friends about it” (a11), and “I felt very uncomfortable when I was infected with COVID-19, so I looked for relief methods on platforms like Rednote and also sought comfort from friends” (a2); when feeling bored and empty. For example, “I was too bored during the lockdown period, so I wanted to find others for companionship” (a6), and “Suddenly there was a lot of free time at home, and I was too bored, so I would browse platforms like TikTok, Rednote, and Douban to kill time” (a8). Spatial distance was also a consideration for support seekers. When seeking instrumental support, individuals would first consider asking for help from people with closer spatial distances. A small number of participants ($n = 2$) stated that when seeking help from less familiar people or through certain platforms, they would consider privacy issues, fearing the leakage of personal information.

3.3.2 Interpersonal Interaction Factors

Most participants ($n = 14$) reported that their expectations of others’ ability to provide help would affect their seeking of online social support. When encountering practical difficulties, individuals were more inclined to seek help from people around them rather than distant family and friends, because they could provide faster and more effective help. For example, “If I sent a WeChat message to my family saying that my throat hurt very much, they couldn’t help relieve the pain. Telling me to drink more water or take medicine didn’t really help, so I rarely mentioned this to them” (a5). Individuals were more inclined to disclose themselves to those who could understand their emotions and empathize with them. For example, “I think I really need others to resonate with my emotions. In the process of making friends, I will keep

many people who resonate with me. Those who cannot resonate with me, I will classify them as people who occasionally provide help, and I will not take the initiative to contact them” (a1). Most participants (n = 13) were more inclined to seek help from people with closer relationships when encountering problems, and some participants (n = 4) stated that they were more willing to confide their deepest troubles to strangers on platforms. Participants with a larger number of friends showed more help-seeking behaviors. For example, “During the pandemic, I maintained regular online contact with many friends, which allowed me to share experiences and engage in casual banter with others, thus preventing feelings of social disconnection.” (a15). Several participants (n = 6) also stated that considering others would hinder them from seeking help from others. For example, “A difficulty at work at that time was that it was not easy to ask colleagues or bosses for support and help, because everyone was in a very weak physical state like you” (a13), and “I didn’t want to tell my family about my situation because I was afraid they would overthink and worry excessively” (a15). One participant mentioned that conflicts with support providers would also hinder them from continuing to seek help (a6).

3.3.3 Personal Traits Factors

Individuals who were independent, curious, socially active, prone to worry, preferred to talk to others, and optimistic were more inclined to take the initiative to seek support from others, while cautious, introverted individuals who were not willing to disclose themselves were less likely to seek support from others.

3.3.4 Online Engagement Characteristics

Online engagement characteristics were also important influencing factors of online social support. Most participants (n = 11) stated that they were more socially active online, and individuals who were embarrassed to seek help in reality became bolder and more active online. For example, “I may be quite shy in reality, but I may speak freely online” (a16). Individuals with high media literacy could fully utilize online resources and were more inclined to seek online social support. Some participants (n = 4) preferred online support-seeking. For example, “I usually like chatting with friends, and I prefer online chatting over offline activities, so I kept in contact with many friends during the pandemic” (a15), while others were more inclined to seek support in reality. For example, “I prefer to seek help from others in real life” (a2).

4 Discussion

4.1 Online Social Support as an Important Resource during Major Public Health Emergencies

The study revealed that the dimensions of online social support during the pandemic were similar to those of offline social support, including problem-solving support and empowering support [22]. These observed patterns of online social support may be interpreted in light of collectivist cultural norms that have shaped public responses to the pandemic in China. First, in terms of informational support, participants in this study primarily engaged in information exchange centered on pandemic updates and health protection measures. This focus on collective health-related information stands in sharp contrast to findings from existing research in Western individualist contexts, where internet users tended to prioritize individual-related issues such as education and employment during the pandemic [23]. Second, expressions of care and concern emerged as the most prevalent form of emotional support among young Chinese adults in our sample. Such interactions not only deliver emotional comfort but also serve important functions of affirming group belonging and maintaining social bonds, which may further reinforce a collective sense of community during the crisis.

Online social support has long been regarded as an important supplement to offline social support [24], with its most commonly studied function being the improvement of mental health [25]. However, during the pandemic, the most critical function of online social support was to ensure the normal operation of daily life, work, and academic pursuits, providing a communication platform for solving practical problems. This function is mainly realized through problem-solving support. Alleviation of negative emotions and improvement of psychological comfort are primarily achieved through empowering support. When individuals received online social support, negative emotions such as loneliness, panic, stress, distress, and emptiness were alleviated, and positive feelings such as happiness, relaxation, peace of mind, and certainty were strengthened. This is consistent with previous research findings [26] and aligns with the buffering effect model proposed by Cohen and Wills [27], which suggests that online social support can buffer the negative impacts of stressful events on individuals' physical and mental states and enhance their coping capabilities. Facilitating adaptive adjustment also stands as a vital function of online social support amid the pandemic. The themes of online social support were highly related to shared pandemic experiences, allowing individuals to encounter online community members with similar experiences. Through interaction, they developed a sense of community that "I am not alone," fostering collective cohesion, reducing uncertainty, and increasing a sense of strength. Observing the successful experiences of other online members overcoming difficulties, as well as the efforts made by the government, medical staff, volunteers, and other groups, enhanced individuals' collective efficacy in facing and overcoming the pandemic. At the same time, the findings point to the dual-edged nature of online social support. Exposure to negative or excessive information, and unmet expectations when seeking help, could aggravate negative emotions or produce a sense of being disturbed. This suggests that online social support during public health emergencies may also entail risks such as information overload, emotional contagion through distressing content, ineffective or mismatched support, and a sense of boundary intrusion. Recognizing these potential downsides is important for designing online support systems that maximize benefits while mitigating harms.

Numerous factors influence online social support, generally categorized into four aspects: situational factors, interpersonal interaction factors, personal traits, and online engagement characteristics. A longitudinal study showed a positive correlation between active support-seeking on social networks and the acquisition of social support [28]. Exploring the factors influencing individuals' active support-seeking is conducive to enhancing their willingness to seek online support during major public health emergencies. The study found that a unique influencing factor of online social support is online engagement characteristics—individuals with higher media literacy, a preference for online support-seeking, and greater online social activeness were more inclined to obtain support through the internet. The study also revealed that during the pandemic, situational factors were the most frequently mentioned influencing factors. Individuals were more likely to seek online social support when facing unsolvable practical problems, emotional distress, boredom and emptiness, or being in a specific pandemic phase. When selecting help-seeking targets, the evaluation of whether the supporter could provide effective support was an important criterion. Additionally, other interpersonal factors such as the closeness and quality of relationships also exerted an influence, which is consistent with previous research [29]. This study further found that individuals with traits such as worry-proneness, social activeness, independence, curiosity, optimism, and a preference for confiding in others were more inclined to actively seek support, while cautious individuals who were less willing to self-disclose were less likely to do so.

These findings extend existing literature on online social support, which has predominantly focused on its role in buffering stress and alleviating negative emotions. While such effects were evident in participants'

accounts, the present study highlights an underexamined dimension: the stabilizing role of online social support in sustaining daily functioning during prolonged crises. By enabling individuals to maintain routines, coordinate resources, and share experiential knowledge, online social support appears to create conditions under which psychological stability and adaptive coping can emerge. In this sense, the psychological significance of online social support during public health emergencies lies not only in emotional exchange but also in its capacity to anchor individuals' lives amid uncertainty.

4.2 Construction of an Integrated Digital Platform for Online Social Support during Major Public Health Emergencies

The social-ecological systems theory posits that people live in unique ecological systems, where they continuously and dynamically interact with the social environment. Individuals are influenced by and maintain constant dynamic interactions with other systems such as family, groups, organizations, and communities [30]. Online social support played a vital role during the pandemic, and participants accessed support through various existing platforms. However, the thematic analysis undertaken in this study demonstrates that this dispersed support pattern has notable negative effects: the difficulty in distinguishing authentic information from misinformation and unmet expectations for effective support, which exacerbate individuals' emotional distress. Accordingly, it is necessary to build an official-led, multi-stakeholder integrated digital platform that provides centralized, authoritative, reliable support services precisely aligned with individual needs, so as to effectively mitigate the negative effects of online social support empirically identified in this study.

In line with the support needs identified in this study, the development of such an integrated digital platform should focus on two core service priorities. First, it should consolidate problem-solving support resources: on one hand, centralizing authoritative, real-time updates on epidemic trends, prevention protocols, and clinical guidance to reduce public uncertainty and curb misinformation diffusion; on the other hand, coordinating instrumental mutual-aid resources such as medical supplies and daily necessities to improve the efficiency of practical support during periods of resource scarcity. Second, it should strengthen empowering support provision: facilitating peer connection among people with shared pandemic experiences to leverage the unique emotional value of weak social ties, and integrating standardized mental health hotlines and evidence-based psychological self-help resources to provide accessible professional support for individuals.

5 Implications and Limitations

This qualitative study explores online social support amid major public health emergencies, yielding notable theoretical contributions and practical implications. From a research perspective, this study centers on online social support within the unique context of public health crises. It addresses a research gap in existing literature, which has largely focused on individual stressors while overlooking public crisis scenarios. By systematically unpacking how online social support functions under circumstances marked by high uncertainty, resource constraints, and social isolation, the present work extends the boundary conditions of social support theory. From a theoretical perspective, the field of online social support currently suffers from inconsistent research findings and incomplete theoretical frameworks. Adopting a thematic analysis approach, this study provides an exploratory account of online social support during the pandemic. Based on empirical data, the study identifies core thematic dimensions and develops an analytical framework encompassing the types, functions and influencing factors of online social support. In terms of practical implications, this study thoroughly examines individuals' actual needs for online social

support during the pandemic. The findings can inform policymakers in developing more humanistic and targeted mental health intervention programs. They also provide actionable references for community organizations, mental health institutions and public health administrators, and facilitate the establishment of a more resilient social and psychological service system.

There are several limitations to this study. First, the online recruitment of participants may have introduced sampling bias toward younger, highly educated individuals who are more digitally active and possess higher digital literacy, while excluding digitally disadvantaged groups such as older adults. This limitation may compromise the generalizability of the study findings. Second, this study employed a qualitative research methodology and collected data through self-report measures. Data obtained via self-report are susceptible to participants' subjective perceptions and recall bias, which may limit the precision of the conclusions drawn. Therefore, future research should adopt a mixed-methods research design to triangulate qualitative findings with quantitative data, thereby enhancing methodological rigor. Third, this study examined the characteristics of online social support during the COVID-19 pandemic using a Chinese sample, and the cultural generalizability of the findings remains to be validated. Cross-cultural comparative studies are needed to identify the commonalities and differences in online social support between collectivist and individualist cultural contexts during public health crises. Finally, although COVID-19 served here as a representative major public health emergency, the extent to which these findings generalize to other types of public health emergencies remains to be empirically examined.

6 Conclusions

During major public health emergencies, online social support served as an important resource for sustaining daily functioning and promoting mental health, complementing offline support. These findings highlight the need to establish an official-led, multi-stakeholder integrated online social support systems during public health emergencies, which can help stabilize individuals' daily lives and facilitate emotional regulation in times of crisis and uncertainty.

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Availability of Data and Materials: Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data is not available.

Ethics Approval: The study has been approved by the Ethics Committee of Central China Normal University (No. CCNU-IRB-202312016b). All methods were performed following the relevant guidelines and regulations. Prior to the interview, the research purpose and the right to withdraw were clearly explained to each participant, who then signed an informed consent form.

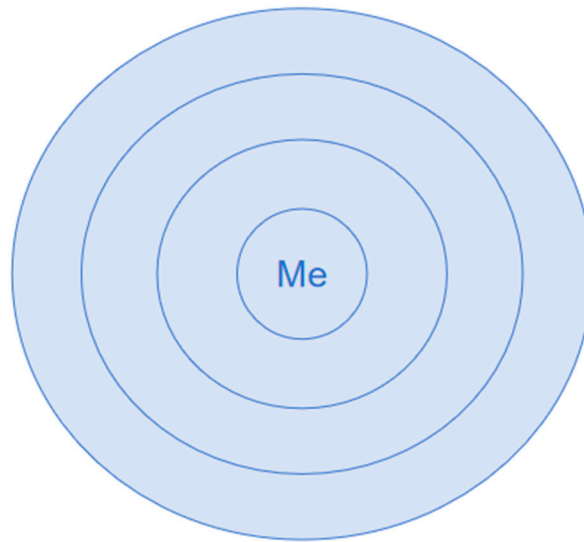
Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Semi-Structured Interview Outline

I. Completing the Social Support Network Diagram

Instructions: Before the interview begins, we would like to understand your experience of receiving online support during the pandemic. Please complete the following diagram: In this diagram, “Me” represents you. You need to write down the people/platforms/organizations that frequently provided you with online social support during the pandemic in the layer closest to “Me”; those that provided support relatively often in the second layer; and those that provided support occasionally in the outermost layer.



II. Formal Interview

1. Looking at the social support network diagram you just completed, recall what specific online social support you received during the pandemic?
2. Under what circumstances would you take the initiative to seek online social support from others?
3. What difficulties did you encounter in the process of seeking online social support?
4. Do you think you received relatively little or much social support during the pandemic? (You mentioned you received relatively much/little online social support).
5. What personal characteristics do you think led to this result? (Please list 3–5 characteristics).
6. Do you think online social support had a significant impact on you during the pandemic?
7. If the answer to Question 6 is “little impact”: Why do you think the impact was small? (We may follow up on factors that hindered your support-seeking) In which aspects did it play a role, and what role was that?

If the answer to Question 6 is “significant impact”: Why do you think the impact was significant? In which aspects did it play a role, and what role was that?

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