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An investigation on information quality, media richness, and social media fatigue during the disruptions of COVID-19 pandemic

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Abstract
Mobile social platforms have become a valuable information source by which users gain information about the COVID-19 pandemic. However, little is known about whether users have experienced increased daily fatigue as a result of the disruptions caused by pandemic. Drawing on the cognitive activation theory of stress (CATS), this study proposed that two typical characteristics of social media platforms (SMP), information quality and media richness, are associated with event disruptions of the COVID-19 pandemic (EDC), and then induce social media fatigue. To address this, this study used the experience sampling method (ESM), collecting 550 matched cases from 110 users of the WeChat application in mainland China over five consecutive days. Through multilevel structural equation modeling (MSEM), this study discovered three main findings: (1) daily information quality is negatively related to event disruptions of the COVID-19 pandemic, which in turn decreases daily social media fatigue; (2) daily media richness is positively associated with such event disruptions, which ultimately increases daily social media fatigue; (3) these effects were stronger for users who reported higher (vs. lower) levels of health consciousness. The implications of these results for the COVID-19 pandemic and beyond are discussed.

Keywords Information quality · Media richness · COVID-19 pandemic · Event disruptions · Social media fatigue · Health consciousness

Introduction

Starting in late 2019, the new coronavirus disease (COVID-19), which has been classified as a global pandemic by World Health Organization (2020), shocked the world heavily. And many countries required citizens to stop commuting and even isolate themselves at home to halt the spread of the pandemic (Fischer et al., 2020). Meanwhile, a notable phenomenon observed in the current COVID-19 pandemic was exactly that general pubic followed various social media platforms (SMP), constantly browsing, forwarding, and sharing information and experiences related to COVID-19 every day in order to fully understand the pandemic to protect themselves and their family (Chongqing Evening News, 2020). However, this behavior may not reduce anxiety. On the contrary, social media fatigue may occur when people are unable to follow the updates in real time and need to catch up later on what they have missed (Matthes et al., 2020).

In fact, previous studies have found firm evidence for the advantages of SMP for facilitating users' effective communication, especially when people are required to practice social distancing (Tanhan, 2020). However, with the sharp growth in the number of users and the overburdening stream of information related to COVID-19, the negative effects of SMP use are becoming prominent, such as social media fatigue (Dhir et al., 2020; Zong et al., 2019). The result of social media fatigue is a decreased number of active users on SMP and is related to a variety of negative well-being outcomes and behaviors (Dhir et al., 2018). Therefore, social media fatigue during the COVID-19 pandemic is a potentially prevalent and influential phenomenon that earns further exploration.

Previous studies have identified stressors that cause social media fatigue in daily life (Malik et al., 2020; Tandon et al., 2021; Whelan et al., 2020). However, the association of social

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media fatigue and the stressors caused by COVID-19 pandemic is poorly understood, which may be attributed to certain limitations of prior research. Recent studies have used event disruptions caused by the COVID-19 pandemic (EDC) to identify the stressors caused by the COVID-19 pandemic (Lu et al., 2020). Thus, we first attempt to investigate whether EDC can trigger social media fatigue.

In addition, prior research has focused mainly on the outcomes of EDC, while there exists limited knowledge on its antecedents and boundary conditions. Since SMP have become one of the main sources for people to acquire health support and related information during the COVID-19 (Jakhar et al., 2020; Shao & Pan, 2019). It is necessary to explore the influences of information characteristics of SMP on EDC and social media fatigue. And the COVID-19 pandemic is a threat to people's health (Heymann & Shindo, 2020). Under such circumstances, health consciousness exerts considerable influence on regulating individuals' health attitudes and behavior (Meng et al., 2019). Subsequently, we also want to explore whether health consciousness may increase or decrease the likelihood that EDC is perceived as stressful, and thus leads to social media fatigue.

To address the gaps in current research, we focused on answering two primary research questions: (1) Is there an association between information characteristics and social media fatigue due to EDC? (2) Do the associations between information characteristics and social media fatigue due to EDC differ for people who has high health consciousness versus low? We adopted an experience sampling method to collect data from 110 WeChat users in mainland China over five consecutive days. We used multilevel structural equation modeling to examine the temporal influences of information quality and media richness on social media fatigue via EDC.

In doing so, this study makes three contributions to the literature on social media fatigue and EDC. First, this study identifies the proximal influences of two information characteristics (information quality and media richness) on EDC, extending our understanding of the antecedents to EDC. Second, this study explores the underlying mechanism by which information quality and media richness impact social media fatigue by exploring the mediating role of EDC on a daily basis. Third, this study elaborates the conditions under which information quality and media richness are more or less influential in inducing social media fatigue via EDC by exploring the moderating role of health consciousness.

Theoretical Framework: Cognitive Activation Theory of Stress

The present study adopts the cognitive activation theory of stress (CATS) as the overarching theory to elaborate on the boundary condition and indirect effects of information quality and media richness on social media fatigue via EDC. Since it is a broad theoretical model that focuses on dynamic within-individual variation in responses to stress and has been used in Internet research (Zhang et al., 2020). For instance, based upon the CATS, Wyller et al. (2009) examined a causal relationship between sustained arousal and the experience of fatigue. Zhang et al. (2020) found the COVID-19 pandemic induced mHealth emergency use intention via psychological strain according to the CATS.

Specifically, CATS suggests that individuals use external cues to evaluate situations (Meurs & Perrewe, 2011). Therefore, this study uses two typical information characteristics of SMP, information quality and media richness, to represent the external cues used to evaluate the EDC (Raghunathan, 1999; Shao & Pan, 2019). Both characteristics have been regarded as antecedents to SMP users' attitudes and behavior (Raghunathan, 1999; Tseng et al., 2017). In this vein, we attempt to explore the influences of information quality and media richness on EDC and social media fatigue.

Then, CATS posits that individuals will feel stress when the future is unpredictable, or their resources are not sufficient to cope with the demands (Karaman & Watson, 2017). Since EDC focuses on perceptions about interferences with one's lives and work habits (Lin et al., 2021). Confronted with such EDC, individuals feel that COVID-19 disrupts their usual daily activities (McFarland et al., 2020), they are more likely to experience stress, resulting in social media fatigue (Arslan et al., 2020; Doyumğaç et al., 2021; Tanhan et al., 2020).

In addition, CATS also addresses that individuals' characteristics play an important role in shaping individuals' responses to stressors (Teig et al., 2019). The COVID-19 pandemic is a threat to people's health (Heymann & Shindo, 2020). Under such circumstances, health consciousness exerts considerable influence on regulating individuals' health attitudes and behavior (Meng et al., 2019). Ahadzadeh et al. (2018) found that individuals with high health consciousness tend to find health information online. This study thus uses health consciousness as the condition under which information quality and media richness are more or less influential in inducing social media fatigue via EDC. In general, we examined the associations among five contemporary phenomena: information quality, media richness, EDC, health consciousness and social media fatigue (Table 1). And the proposed conceptual model is shown in Fig. 1.

Hypothesis Development

Information Quality and EDC

SMP are a principal source of COVID-19 pandemic information (Liu et al., 2021). When obtaining information through the use of SMP, information characteristics play a vital role in shaping users' responses (Zhang et al., 2020). Information

Table 1 Description of Study Variables

Variables	Description	Adapted from
Information Quality	Information quality is one of the core characteristics, indicating the extent to which information is transmitted accurately, precisely, and clearly.	Koivumäki et al. (2008); Laumer et al. (2017).
Media Richness	Media richness refers to the extent to which the media portray more than just the words or text of the message.	Trevino et al. (1987).
Event Disruptions of COVID-19	Recent studies have used event disruptions caused by the COVID-19 pandemic (EDC) to identify the stressors caused by the COVID-19 pandemic, we defined EDC as the degree of changes that individuals experience in the way they live (e.g., daily activities, work procedures, and/or routines) due to the COVID-19 pandemic.	Lin et al. (2021); Morgeson et al. (2015).
Social Media Fatigue	Social media fatigue refers to a self-regulated and subjective feeling of tiredness resulting from SMP use.	Dhir et al. (2019); Lee et al. (2016).
Health Consciousness	Health consciousness reflects an individual's readiness to do something for their health, and to assess opportunities to undertake healthy actions.	Chen (2009).

quality is one of the core characteristics, indicating the extent to which information is transmitted accurately, precisely, and clearly (Koivumäki et al., 2008). The latest studies suggested that huge the amount of COVID-19-related information generated on social media has overwhelmed users (Islam et al., 2020). Meanwhile, the redundancy in the quantity of information is always accompanied by a decline in the quality of information (Schmitt et al., 2018). During the COVID-19 pandemic, clear communication of the severity of the situation and recommended health measures was needed to ensure people took correct action and did not suffer from unnecessary anxiety and disruption (Farooq et al., 2020). The abundance of unclear, ambiguous and inaccurate information about COVID-19 could hampers people's capacity to find trustworthy sources and reliable guidance in case of need (Hua & Shaw, 2020), making it harder for people to adapt to the COVID-19 pandemic and feel more EDC (Zaroncostas, 2020).

Conversely, the distinguishing feature of high-quality information is that information is transmitted accurately, precisely, and clearly and it is easy to learn and use (Forsgren et al., 2016). This feature becomes especially important in the COVID-19 pandemic given the novelty, rapid development and unpredictability of the COVID-19 (Islam et al., 2020). And high information quality enables users to timely adjust their routines and behaviors to adapt to the COVID-19 pandemic, undermining the perception of EDC (Laato et al., 2020). Therefore, we hypothesize the following:

Hypothesis 1: *Information quality is negatively associated with EDC on a daily basis.*

Media Richness and EDC

Another significant characteristic of SMP is media richness. Prior studies have confirmed its advantages in conserving platforms' active users and enhancing communication efficacy on SMP (Shao & Pan, 2019). However, recent studies have found that the richer the media was, the more information is processed in the short term (Tseng et al., 2017). Then, users are more likely to experience information overload and decreased decision-making quality, especially when the information is novel and negative (Fox et al., 2007; Schneider, 1987). Since, information about the COVID-19 pandemic, such as the infectious mechanism or the prevention strategies, is novel to most recipients (Chan et al., 2020).

In addition, during the COVID-19 pandemic, public is more likely to to rely on salient examples to evaluate their severity or the probability of being personally affected, especially when news is distressing and frightening (Zillmann, 2002). This becomes an issue as the frequent reminders of COVID-19 (not only via words or texts, but also through personal appeal or videos showing the painful patients) on social media may disproportionately weigh on people as they assess potential threats, even when they are not directly affected (Hopwood et al., 2019), which have intensified the anxiety of this pandemic (Yoon et al., 2021). Therefore, when encountering information about COVID-19 on SMP via rich media forms, individuals may not form correct and clear perceptions of EDC and thus may not effectively adapt their behavior and attitudes, leading to EDC having exaggerated influence. Therefore, we argue that media richness increases the disruptions of the COVID-19 pandemic. Hence, we hypothesize the following:

Hypothesis 2: *Media richness is positively associated with EDC on a daily basis.*

EDC and Social Media Fatigue

In the particular research context of information systems, social media fatigue refers to a self-regulated and subjective feeling of tiredness resulting from SMP use (Lee et al.,

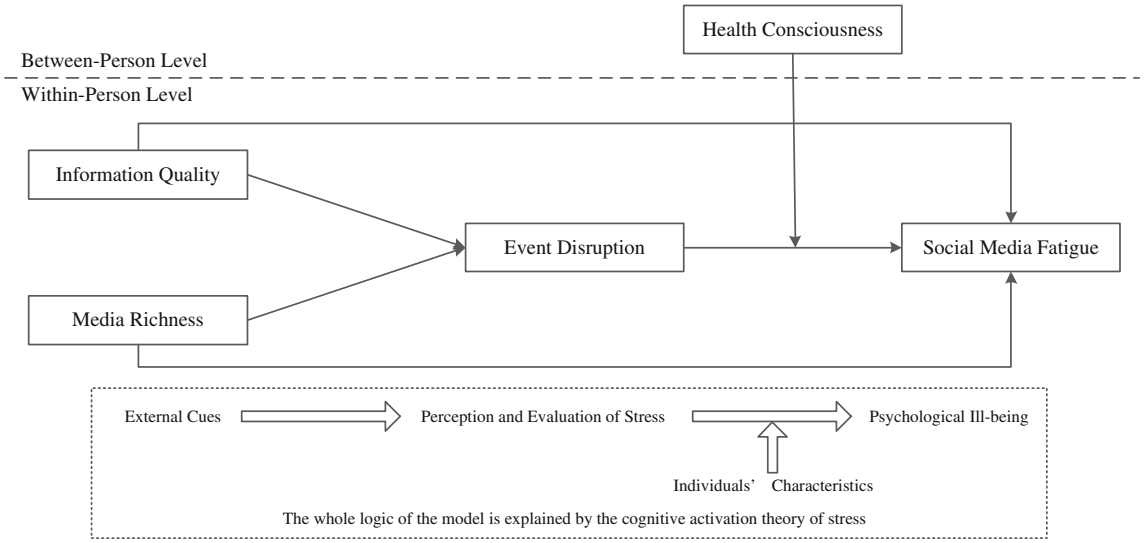

Fig. 1 Conceptual Model

2016). Although prior studies have explored the role of stressors like compulsive use (Dhir et al., 2018), privacy concerns (Malik et al., 2020), fear of missing out (Tandon et al., 2021) and information overload (Whelan et al., 2020), the stressors were mainly variety of "technostress" (Budnick et al., 2020). To date, few studies have explored the influences of specific public crises on social media fatigue (Zhang et al., 2020).

EDC reflects changes or discontinuity in the environment, representing the degree of changes that individuals experience in the way they live (e.g., daily activities, work procedures, and/or routines) due to the COVID-19 pandemic (Morgeson et al., 2015). As such, users who perceived highly EDC may find it difficult to have a normal social life or get work done, which could lead to higher levels of perceived anxiety or depression (Lin et al., 2021). In contrast, users who perceived less disruptive feel that their lifestyle do not change much and their capability of fulfilling jobs is not undermined by the pandemic, resulting in less anxiety. Psychiatric research has provided firm evidence on the influence of EDC on depression and anxiety (Arslan et al., 2020; Roy et al., 2020). Depression and anxiety are immediate responses to stressful situations that further impact personal fatigue (Fawzy & Hamed, 2017; Tandon et al., 2020). For example, Cao and Khan et al. (2018) found that internal disorders like depression and anxiety lead to social media fatigue. In addition, high EDC caused users to have a sense of losing control (Liu et al., 2021). The tendency to want to maintain a feeling of being in control also leads to increased SMF (Liu et al., 2021; Xiao et al., 2019). Hence, we hypothesize the following:

Hypothesis 3: *EDC is positively correlated with social media fatigue on a daily basis.*

Mediating Role of EDC

As aforementioned, users use SMP to form their perceptions of the disruptions of the COVID-19 pandemic. In this process, information quality decreases EDC, while media richness increases EDC. Furthermore, CATS suggests that strain arises when the future is unpredictable, or when individuals' resources are not sufficient to cope with new demands (Meurs & Perrewe, 2011). The EDC is unpredictable and out of people's control to change or curb by themselves. EDC causes internal disorders like depression and anxiety, and leads to social media fatigue (Xiao et al., 2020). Therefore, we argue that the two core information characteristics (information quality and media richness) may influence individuals' perceptions of EDC, which in turn induce social media fatigue due to increased depression and anxiety. Hence, we hypothesize the following:

Hypothesis 4: *EDC mediates the relationship between information quality and social media fatigue.*

Hypothesis 5: *EDC mediates the relationship between media richness and social media fatigue.*

Moderating Role of Health Consciousness

CATS addresses the role of personality in shaping the cognitive activation processes of stress. Health consciousness, as an individual characteristic, reflects an individual's readiness to do something to their health, and to assess opportunities to undertake healthy actions (Chen, 2009). In the time of the COVID-19 pandemic, maintaining a healthy status is an individual's primary concern (Rajkumar, 2020). Health consciousness plays a vital role in shaping individuals' behavior

and attitudes. For example, Zhou & Krishnan (2019) found that health consciousness moderates the relationship between social media activity on exercise and exercise maintenance. Zhang et al. (2020) found that health consciousness can strengthen the effect of quality of information on negative coping. Individuals with high health consciousness tend to find health information online (Ahadzadeh et al., 2018).

When engaging with EDC, users with high health consciousness tend to acquire related information that is novel and negative. These individuals are then more likely to experience information overload, and to feel uncertain about how to cope with EDC. Consequently, they will have stronger feelings of depression and anxiety, leading to higher social media fatigue. In contrast, users with low health consciousness are not eager to search for extra information related to COVID-19. They may simply respond to EDC by following the guidelines set out by the authorities. These individuals will feel less uncertain, and experience fewer social media fatigue. Therefore, we hypothesize the following:

Hypothesis 6: *Health consciousness moderates the relationship between EDC and social media fatigue, such that people have stronger feelings of social media fatigue in the condition of high health consciousness than in the condition of low health consciousness.*

Method

Sample and Procedures

Given that this study was performed during the COVID-19 pandemic, the convenience sampling method was employed to recruit participants according to the research of Du, Derks, and Bakker (2018). The selection criteria included: 1) at least one year of experience using the WeChat; 2) living in mainland China; and 3) having at least one mobile device connected to the internet. WeChat was chosen as an example of a social media platform because it is one of the most popular SMP in China with more than one billion active users worldwide in 2017 (Shao & Pan, 2019;). WeChat provides rich media functions such as short videos, news recommendations, public official accounts, and online buying (Lien et al., 2017). Therefore, users can enjoy one-stop service in WeChat to acquire and communicate information related to the COVID-19 pandemic.

We supplied a detailed plan of the five-day research process and purpose to the participants, and an initial 150 participants were invited to join the research group. Data collection consisted of two stages; this served to decrease the common method bias (CMB) to some degree. The first stage happened on the 21st of February, 2020. Participants completed a one-time survey including demographic information about gender, age, and education, and the moderating variable of health consciousness. The second stage took place from the 24th to the 28th of February, 2020. Participants were asked to respond to two daily surveys each day, for five subsequent workdays. On each workday, participants were given from 11:00 a.m. to 1:00 p.m. to finish a questionnaire assessing information quality media richness and EDC, and another questionnaire assessing social media fatigue from 5:00 p.m. to 7:00 p.m.

All the questionnaires were finished in website links, and sent by the research assistants in the WeChat research group. Finally, 550 matched cases nested in 110 participants were collected for analysis yielding an effective response rate of 73.3%. The participants received 25 RMB (about 3.53 USD) as an incentive for full participation in the five-day research process. The detailed demographic information is shown in Table 2 below.

Measurements

The measurements in this study were adapted from prior studies. Using the experience sampling method, the items were adapted to fit the daily context of WeChat use. Short scales were adopted to ensure a high response rate (Donald et al., 2016). The scales were presented as a seven-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*.

Information Quality. This was measured by four items developed by Bhattacherjee and Sandford (2006). A sample item is "Today, the information provided about COVID-19 on WeChat was informative". The Cronbach's Alpha of this scale was 0.79.

Media Richness. Four items developed by Brunelle (2009) were used to measure the media richness of WeChat. A sample item is "Today, WeChat gave and received timely

Table 2 Demographic Information

Demographic Variables	Groups	N	Percentage
Gender	Male	60	54.60%
	Female	50	45.40%
Education	Primary School	1	0.90%
	Senior School	2	1.80%
	High School	30	27.30%
	College	26	23.60%
	Bachelor and above	51	46.40%
Age	Under 26	2	1.80%
	26–35	50	45.50%
	36–45	36	32.70%
	Above 46	22	20.00%

feedback about COVID-19". The Cronbach's alpha of this scale was 0.83.

Social Media Fatigue. The four items with the highest loadings were adapted from the scale developed by Zhang et al., (2016). A sample item is "Today, I sometimes felt drained from using WeChat." This scale yielded a Cronbach's alpha of 0.93.

EDC. Four items developed by Morgeson, Mitchell, & Liu (2015) were adopted in this study. A sample item is "Today, the COVID-19 pandemic disrupted my ability to get my work done." This scale yielded a Cronbach's alpha of 0.93.

Health Consciousness. This was measured by three items developed by Mai and Hoffmann (2012). A sample item is "I reflect about my health a lot". The internal consistency of this scale was 0.83.

Control Variables. The prior research has controlled for the influences of demographic information in the context of social media (Dhir et al., 2021; Zhang et al., 2016). Previous studies have identified that age (Dhir et al., 2021), gender (Tandon et al., 2021) and education (Xiao & Mou, 2019) could influence social media fatigue. Therefore, we included age, gender and education as control variables.

Common Method bias Testing

All data were retrieved from a single source, and thus CMB may be a potential issue (Podsakoff et al. 2003). To address this problem, we ensured the anonymity and confidentiality of participants. Moreover, we employed the Harman's single factor test; the results revealed that the variance explained by the first single factor was 38.21% (i.e. < 50%), which proves that CMB was not an issue in the present research (Podsakoff et al. 2003). In addition, we tested multicollinearity by calculating the variance inflation factors (VIFs) for all variables. For the highest model, VIFs = 1.38; therefore, multicollinearity did not affect our model results (O'Brien, 2007). Normality was also tested; all kurtosis values for our data set were lower than 7, Kolmogorov-Smirnova values = 061–0.93, $p > 0.2$, confirming that normality did not present any issues for our study (West et al., 1995).

Results

Multilevel Confirmatory Factor Analysis

Multilevel confirmatory factor analysis was performed to examine the construct validity; results are shown in Table 3 below. The five-factor conceptual model (χ^2 = 197.50, *df* = 95, *RMSEA* = 0.04, *CFI* = 0.97, *TLI* = 0.96, *SRMR* = 0.06) has a better fit than any other model, indicating that CMB was not a problem in this study (Podsakoff et al. 2003).

Descriptive Statistics and Correlation Analysis

Table 4 below shows the means, standard deviations, reliabilities, and correlations of the variables both at the within- and between-person levels. We further calculated the within-person variance for the daily variables (information quality, media richness, social media fatigue, and EDC). The proportion of the within-person variance ranged from 69% to 88%, justifying the use of multilevel analysis.

Multilevel Structural Equation Model Analysis

The results in Fig. 2 below show that daily information quality was negatively associated with EDC (γ = −0.10, p < 0.01). In contrast, daily media richness was positively associated with EDC (γ = 0.24, p < 0.01). Hypothesis 1 and Hypothesis 2 were thus supported. Daily EDC was positively associated with social media fatigue (γ = 0.49, p < 0.01). Hypothesis 3 was thus supported.

To confirm the mediating role of EDC in the indirect effects of information quality and media richness on social media fatigue, we used the Monte Carlo Bootstrapping test through RStudio 3.5.3. The results are shown in Table 5 below. The direct effect of information quality on social media fatigue was not significant (Effect = −0.02, 95% CI = [−0.08, 0.04]). The direct effect of media richness on social media fatigue was significant (Effect = 0.14, 95% CI = [0.06, 0.22]). Both the indirect effects of information quality (Effect = −0.05, 95% CI = [−0.08, −0.02]) and media richness (Effect = 0.12, 95% CI = [0.07, 0.17]) on social media fatigue via EDC were significant. Hypothesis 4 and Hypothesis 5 were therefore supported.

We also explored the moderating role of health consciousness in the relationship between EDC and social media fatigue. The interactive item of health consciousness with EDC was significant (γ = 0.14, p < 0.01). We further performed a simple slope test through RStudio. The results showed that the relationship was stronger in the condition of high health consciousness (Effect = 0.57, 95% CI = [0.46, 0.68]) than in the condition of low health consciousness (Effect = 0.41, 95% CI = [0.30, 0.52]). The difference was significant (Effect = 0.16, 95% CI = [0.07, 0.25]). The moderating effect of health consciousness is shown in Fig. 3. Hypothesis 6 was therefore supported.

Finally, we tested the moderated mediation model through the Monte Carlo Bootstrapping test. The indirect relationship between information quality and social media fatigue via EDC was stronger in the condition of high health consciousness (Effect = −0.06, 95% CI = [−0.09, −0.02]) than in the condition of low health consciousness (Effect = −0.04, 95% CI = [−0.07, −0.02]). The difference between these two conditions was significant (Effect = −0.02, 95% CI = [−0.03, −0.01]). The indirect relationship between media richness

Table 3 Results of Confirmatory Factor Analysis

Model	Variables	X^2	df	$\triangle X^2$	*RMSEA*	*CFI*	*TLI*	$SRMR_{within}$
Five-Factor Model	SMF, IQ, MR, EDC, HC	197.50	95		0.04	0.97	0.96	0.06
Four-Factor Model 1	SMF+IQ, MR, EDC, HC	933.11	98	735.61**	0.12	0.77	0.71	0.16
Four-Factor Model 2	SMF+MR, IQ, EDC, HC	613.24	98	415.74**	0.10	0.86	0.82	0.13
Four-Factor Model 3	SMF+ED, IQ, MR, HC	712.84	98	515.34**	0.11	0.83	0.79	0.09
Four-Factor Model 4	SMF, IQ+MR, EDC, HC	557.23	98	359.73**	0.09	0.87	0.84	0.15
Four-Factor Model 5	SMF, IQ+EDC, MR, HC	754.43	98	556.93**	0.12	0.78	0.72	0.16
Four-Factor Model 6	SMF, IQ, MR+EDC, HC	628.77	98	431.27**	0.10	0.88	0.82	0.13

Note: SMF = Social Media Fatigue; IQ = Information Quality; MR = Media Richness; EDC = Event Disruptions of COVID-19; HC = Health Consciousness;

*p < 0.05; **p < 0.01

and social media fatigue via EDC was stronger in the condition of high health consciousness (Effect = 0.14, 95% CI = [0.10, 0.18]) than in the condition of low health consciousness (Effect = 0.10, 95% CI = [0.06, 0.14]). The difference between these two conditions was significant (Effect = 0.04, 95% CI = [0.01, 0.07]). Therefore, supported the moderated mediation effect.

Discussion

The results provide support for two hypotheses testing the direct effects (H1–H3). In addition, EDC had a partial mediation effect on the association of information quality with social media fatigue (H4). Our findings also confirmed that EDC positively moderated the relationship between media richness and social media fatigue (H5). Furthermore, the results indicate that health consciousness amplified the association of EDC with social media fatigue (H6). The results shed light on the complex relationships among information quality, media richness, EDC, social media fatigue, and health consciousness, which manifest as the dark side of social media use during the pandemic lockdown.

H1 and H2 tested the association of information quality and media richness with EDC. The results indicate that information quality negatively influences EDC (H1), while media richness positively affects EDC (H2). The support for H1 is aligned with the theories of prior studies that high information quality is convenient for recipients to learn from and use (Cohen & Karatzimas, 2017), thereby provides a clear view of current situations and coping strategies during the COVID-19 pandemic for users (Zhang et al., 2020). Furthermore, the significance of H2 presents fresh insight into media richness in the context of emergency crisis. Unlike previous studies focusing on its advantages of facilitating users' communication efficiency and satisfaction (Shao & Pan, 2019), we found evidence for the dark side of media richness. A lot of novel, negative, and copious information provided by rich media in the period of the COVID-19 pandemic potentially led users to perceived anxiety and information overload and in turn triggered EDC.

H3 proposed that EDC has a positive correlation with social media fatigue. The results of the statistical analysis

Table 4 Means, Correlations, and Standard Deviations

Variables	Mean	SD	1	2	3	4
Within-Person (N=550)						
1. Social Media Fatigue	4.1	0.68	(0.95)			
2. Event Disruption	4.21	0.77	0.32**	(0.93)		
3. Information Quality	3.01	1.35	0.00	−0.08+	(0.84)	
4. Media Richness	4.64	0.98	0.22	0.23**	0.47**	(0.83)
Between-Person (N=110)	Mean	SD	1	2	3	4
1. Gender	1.45	0.50				
2. Education	4.13	0.94	0.32**			
3. Age	2.71	0.80	−0.20**	−0.18*		
4.Health Consciousness	4.39	0.58	−0.01	−0.01	0.05	(0.72)

Note: Values in the parenthesis are Cronbach's Alpha

+p < 0.1; *p < 0.05; **p < 0.01

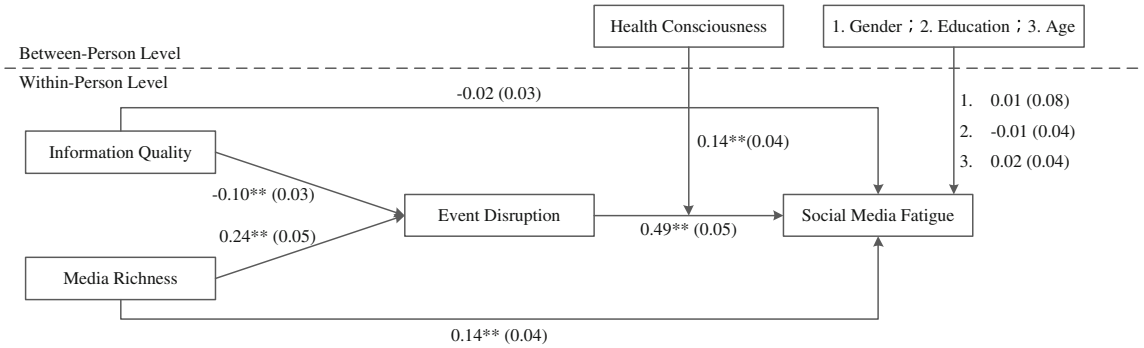

Fig. 2 Results of Multilevel Structural Equation Model

supported H3, confirming a significant positive relationship between EDC and social media fatigue. This is in consistent with prior research that identifies that EDC as an external stressor in the period of COVID-19 pandemic, which increases the likelihood of experiencing social media fatigue (Cao et al., 2018; Liu et al., 2021).

Hypotheses H4 and H5 further examined whether EDC mediates the associations of information quality (H4) and media richness (H5) with social media fatigue. The results support these two hypotheses. More precisely, external cues (i.e., information quality and media richness) affect users' perceptions and evaluations of stress (i.e., perceived EDC), in turn, stimulate psychological ill-being (i.e., social media fatigue).

Table 5 Results of Monte Carlo Bootstrapping Test

Effect	Estimator	SE	95% Confidence Interval	
			Lower Level	Upper Level
Moderating Effect of Health Consciousness				
Low (M-SD)	0.41	0.06	0.30	0.52
High (M+SD)	0.57	0.06	0.46	0.68
Difference	0.16	0.05	0.07	0.25
Mediating Model of Event Disruption				
Information Quality Path				
Direct Effect	−0.02	0.03	−0.08	0.04
Indirect Effect	−0.05	0.02	−0.08	−0.02
Media Richness Path				
Direct Effect	0.14	0.04	0.06	0.22
Indirect Effect	0.12	0.0	0.07	0.17
Moderated Mediation Model				
Information Quality Path				
Low (M-SD)	−0.04	0.01	−0.07	−0.02
High (M+SD)	−0.06	0.02	−0.09	−0.02
Difference	−0.02	0.01	−0.03	−0.01
Media Richness Path				
Low (M-SD)	0.10	0.02	0.06	0.14
High (M+SD)	0.14	0.02	0.10	0.18
Difference	0.04	0.01	0.01	0.07

This finding verified the cognitive activation processes on a daily basis in the context of COVID-19 pandemic, extending prior studies by focusing on the proximal influences of the COVID-19 pandemic on social media fatigue.

H6, examining the moderation effect of health consciousness on the correlation of EDC with social fatigue, remained statistically supported. Our results suggest that health consciousness acts as a moderator that amplified the positive impact of EDC on social media fatigue. Health consciousness drives individuals to seek health-related information and maintain healthy behavior (Hsu et al., 2016). However, information related to the COVID-19 pandemic is mainly negative and novel. As a result, individuals may be confused about how to cope with EDC. In this vein, health consciousness reversely exerts amplifying influences on the relationship between EDC and social media fatigue.

Conclusions

This study examines significant issues associated with information quality, media richness, EDC, and social media fatigue. It identified different influences of information quality and media richness on EDC, by which information quality decreases EDC, while media richness increases EDC. It also

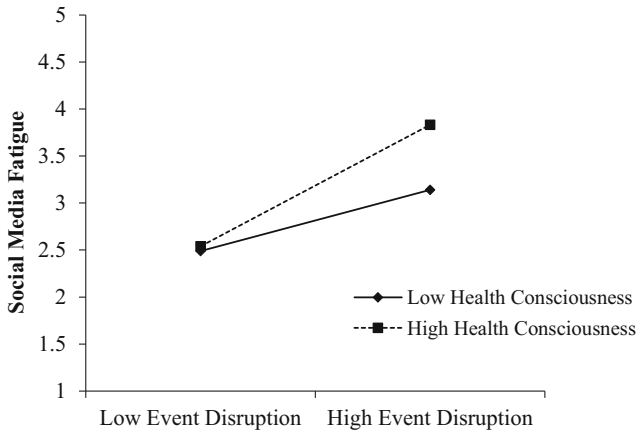

Fig. 3 Moderating Effect of Health Consciousness

explores the temporal mediating role of EDC in the effects of information quality and media richness on social media fatigue. Moreover, it explores the moderating role of health consciousness, health consciousness strengthens the indirect effects of information quality and media richness on social media fatigue via EDC. Thus, this study advances the understanding of the relationship between the characteristics of MSP and social media fatigue in the period of the COVID-19 pandemic in China.

Theoretical Implications

This study makes several theoretical contributions to the literature on social media fatigue and CATS.

First, this study linked the information characteristics of SMP to EDC, extending our understanding of the precursors to event disruptions. Until now, studies have used event disruptions to represent the influences of the COVID-19 pandemic on mental health (Roy et al., 2019). However, few studies have paid attention to the antecedents of event disruptions (Xiao et al., 2020). The COVID-19 pandemic is an emergent and novel health issue (Del Rio & Malani, 2020), and individuals need to base their perceptions the COVID-19 pandemic on diverse information (Liu et al., 2020). Moreover, this study differentiated the influences of information quality and media richness on EDC at the episode level. This study confirmed the positive role of information quality in decreasing EDC, which is consistent with prior studies (Zhang et al., 2020); high-quality information is convenient for individuals to learn from and use (Cohen & Karatzimas, 2017). Conversely, rich media provide mass information for recipients, which needs to be processed within a short time (Robert & Dennis, 2005). In particular, this study addressed the negative side of media richness in the period of the COVID-19 pandemic. When confronted with COVID-19, the excessive information conveyed by rich media is difficult for individuals to use to adjust their behavior and attitudes. Consequently, the influences of EDC will be more severe. This study thus enlarges the scope of the literature on event disruptions of the COVID-19 pandemic.

Second, this study investigated cognitive activation processes in the COVID-19 pandemic by exploring the mediating role of EDC. CATS offers a framework foranalyzing the influences of external stressors on internal responses (Meurs & Perrewe, 2011). The disruptions of the COVID-19 pandemic have changed people's work and life routines, and individuals' low capacities to overcome such disruptions will result in symptoms of anxiety and depression (Morgeson et al., 2015; Tanhan 2020; Xiao et al., 2020). Cao et al. (2018) found that external stressors produce internal disorders, and thus enhance social media fatigue. The present study identified EDC as an external stressor in the period of the COVID-19 pandemic, which increases the likelihood of experiencing social media fatigue.

Finally, this study elaborated the boundary conditions under which EDC is more or less influential in inducing social media fatigue. Based on prior studies (Meurs & Perrewe, 2011; Teig et al., 2019), this study adopted health consciousness as a moderator in the relationship between EDC and social media fatigue. Prior studies have mainly focused on the influence of health consciousness in promoting healthy behavior and attitudes (Shimoda et al., 2020; Zhou & Krishnan, 2019). This study reveals the negative side of health consciousness that occurs when individuals are confronted with a public health crisis, in that health consciousness can amplify the negative influence of EDC on social media fatigue. Therefore, by incorporating health consciousness into CATS, this study calls for future research to further extend the negative impacts of health consciousness on personal behavior and attitudes according to the specific research context.

Practical Implications

Our study has several practical implications for governments, mobile social platforms, and the public. High-quality COVID-19 pandemic information may significantly reduce the likelihood of experiencing social media fatigue. Hence, the relevant departments of the government should pay attention to information quality. Through its websites and the mainstream media, the government can actively and timely release authoritative information in a timely fashion, reduce the spread of rumors, and thereby reduce the fatigue caused by low information quality.

In addition, the negative side of media richness should be addressed. For new and negative information, the richer the media is, the more the recipients will experience media fatigue. Therefore, when mobile social platforms post COVID-19 pandemic information, the information should be presented in a precise and straightforward fashion. In the long run, it is also necessary to strengthen media self-management, and strengthen policy guidance, so as to solve the problem of the absence of media self-responsibility.

It should be noted that health consciousness is not always beneficial. Health consciousness is important in driving individuals to maintain healthy behaviors. However, individuals should not be overly concerned with new and unfamiliar health information about the COVID-19 pandemic, as that can induce unnecessary cognitive overload. The mature public should also learn to cope with the uncertainty and variability of the pandemic in a rational manner.

Limitations and Future Research

This study has several limitations. First, we cannot establish firm causal relationships. Future research may use cross-

lagged panel design or simulation experiment design to explore the influences of information quality and media richness on social media fatigue. Secondly, the CMV may have introduced a potential bias into the results. We collected two-wave data (in the midday and evening) over five consecutive days; this approach can reduce CMV to a certain degree. The data were collected through a self-report questionnaire, which may also induce CMV bias. Future research should consider multi-source data or objective data to avoid CMV. Third, more information and technical characteristics should be considered in the future. Prior studies have confirmed the longitudinal influences of information overload and privacy invasion on social media fatigue (Xiao & Mou, 2019). Future research may further explore their temporal influences on social media fatigue to extend this line of research.

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Data Availability Statements The data used in this study can be found at [https://osf.io/fs4et/].

Declarations

Ethics Approval Statement I would like to declare on behalf of my co-authors that the work described was original research that has not been published previously, and not under consideration for publication elsewhere, in whole or in part. All the authors listed have approved the manuscript that is enclosed.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Conflict of Interest The authors declare that they have no conflict of interests.

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