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Push, Overload, and Exhaustion:
Reactions of Chinese College Students to Information About International News Events on Social Media

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ABSTRACT

This paper studies college students' perspectives on social media discourse surrounding major international events and the effects on their psychological state and information-seeking behaviors. Through empirical research, this paper describes and analyzes the influences of "information push" from important international affairs, its inconsistent information quality, and excessive peer-to-peer sharing on users' emotional exhaustion and resistance to future social media engagement. Frequent push notifications cause interruptions that engender exhaustion. This paper identifies the "neglect" and "shielding" behaviors that can then result. Building on stressors previously identified in information overload on social media, this research furthers understanding of their interconnections. This paper develops a model that links social overload and system features with exhaustion, psychological resistance, social media discontinuation, and burnout. Corresponding countermeasures are put forward with proposed utility for social media users and the platforms themselves.

KEYWORDS

Social Media, Push Notifications, Information Overload, International News Events, College Students, China, Social Media Avoidance, Shielding Behavior, SSO Model

INTRODUCTION

With continued development and innovation in internet and mobile communication technology, social media has become increasingly ubiquitous. It has eliminated geographical barriers and brought

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about an explosion of online participation. In January of 2024, there were more than 5.04 billion users of social media globally with eight new users joining every second (Kemp, 2024). Social media provides an ideal environment for researchers, with the potential for synchronous and continuous analysis of countless massive datasets all updated in real-time. Social network analysis is now thriving at its "unique intersection of natural and social sciences" (Himelboim, 2017, p. 1). And elements of social media research are now widely applied in diverse fields, where they help elucidate the platforms' myriad societal impacts, both positive and negative (Siddiqui & Singh, 2016).

Effects of Information Overload on Social Media

Information overload is one such negative aspect. Previous studies have concluded that the "information overload" phenomenon exists as a product of the information content inherent on the social media platform, the "features" of that platform and informative system, and social aspects—and that overloading information will lead to discontinuing of use (Fu et al., 2020; Zhang et al., 2016). Deceptive information has a growing impact on society through all kinds of social media (Zimmer et al., 2019). But Bright et al. (2015) found that "social media helpfulness"—that is, the likelihood that a platform would provide *helpful* or instructive information—was also correlated with fatigue emotions among users. On X (formerly Twitter), more than a third of users have been found to "ignore" some of the received information: When users feel information overload, they engage a selective attention, ignoring some tweets (Sasaki et al., 2016). Information overload is both emotional and cognitive (Belabbes et al., 2023). For adolescents, without follow-up and guidance from school and their families, social media can have negative effects on social identity (Elsayed, 2021), academic performance (Du & Wang, 2024; Sun et al., 2023), and deleterious mental health outcomes (Wang et al., 2024a). It is thus important that young people are afforded the opportunity to learn effective social media use and how and where to direct their attention online.

Social Media Use During International Major News Events

Social media is now pivotal in the spread of information pertaining to politics and major news events. And previous studies have shown that when news of an event with global significance first breaks, the spread of information on social media can lead to negative psychological effects on recipients. For example, many of the patients who first contracted coronavirus presented with various adverse psychological symptoms such as depression, a perceived "lack of self-control" or internal sense of efficacy, and anxiety attributed to receiving their information on the coronavirus from social media (Amin, 2020). Likewise, moral education is increasingly challenging since some features inherent to existing social media platforms encourage and enhance habitual cognitive biases (D'Olimpio, 2021). Social media played a crucial and organizational role in major political events such as Brexit, a key means by which ideas are disseminated and opinions shaped (Mora-Cantallops et al., 2021). For political events such as the European Parliament elections in the United Kingdom in 2014, engagement was positively correlated with social media conversations (Vaccari et al., 2015). The Arab Spring showed how social media platforms are likewise significant in developing countries with the power to affect major change far beyond cyberspace (Younus et al., 2011). Certainly, it can be seen from the literature that social media has important influences on politics and prevailing news narratives.

Ahmed and Rasul (2023) have demonstrated a correlation between social media fatigue and inclination to believe misinformation, an effect that holds internationally and suggests a multiplier effect of fatigue itself as exhausted users disseminate information of inconsistent quality that exhausts other users in turn. Given that the format of a user's relationship with social media can alter their political participation, interest, and knowledge (Matthes et al., 2023), a healthy society of engaged citizens will require a deeper understanding of the intersubjective functions of global news cycles as they are experienced today.

Our Contribution and Generalizability

Social media can facilitate the transfer of psychosocial and behavioral effects to users at a great distance geographically from instigating events. Recent research on COVID-19 coverage on social media has identified a transference of social media exhaustion and associated avoidance behaviors, along some of the same dimensions as this paper will explore independently of participants' offline experiences of the pandemic (Khan, 2021; Wang & Zhu, 2020). earlier research into discontinuation behaviors has focused on inherent features of the social networks themselves (Fu et al., 2020; Zhang et al., 2016). Moreover, the global pandemic has engendered structural desensitization to coronavirus-related information in health, politics, wider society, and even at journals and research organizations (Uludag, 2022). But more research is needed to disambiguate the exhaustion and resistance effects of information overload as it radiates from significant news events that are not directly related to users' daily lives and do not lead to total discontinuation. By studying reactions to major international crises, high-profile political events and their fallout, and the discourse and sentiments that emerge around them, we will be better able to isolate the roles of the platforms and their regulation and therefore be better equipped to propose interventions.

This paper uses events from the global news cycle and a population at a geographical distance—Chinese college students—to create a test case for the effects of information overload. China's college student body is a massive population in its own right, 291 million in 2023 (Zhao, 2024) and is a barometer for generational shifts in attitudes within and beyond China and the principal market in which world-leading social media companies such as ByteDance and Tencent develop their platforms. TikTok, first developed as "Douyin" in China for a Chinese market, has transformed the social media landscape globally—causing competitors like YouTube and Instagram to scramble to imitate it—which has profoundly transformed youth culture in the process (Waechter, 2021). X and Meta's WhatsApp have likewise attempted to imitate WeChat, a Tencent "everything" application, and Chinese tech giants have clearly become very savvy in their ability to bring their technological infrastructure to market cross-culturally (Sun, 2023; Vecchi & Brennan, 2022). The platforms that Chinese big tech develop, their domestic userbase, and the protocols and conventions that emerge from the transference between these have global significance both within social media and beyond.

This affords data collected within this population and application infrastructure a degree of generalizability, though best corroborated by follow-up studies with wider scope. The generalizability of the findings in this study is greater given that the instigating events are distant from the lives of the participants, quite unlike the coronavirus, which had profound effects on daily life. It is the authors' hope that these explorations can provide a meaningful contribution to the literature on social media in global news cycles and our cross-cultural understandings of information overload.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

The Stress-Strain-Outcome Model

The stress-strain-outcome (SSO) model was originally used to describe stress in psychological research (Koeske & Koeske, 1993). It has since been applied in various fields, recently and pertinently in assessing the effects of misinformation during the COVID-19 "infodemic" (Khan, 2021). Fu et al. (2020) used the model to show that users' discontinuation behaviors and social media exhaustion may be caused by information overload. Wang and Zhu (2020) deployed SSO in investigating the effects of the "infodemic" among Chinese college students through parameters of information overload, psychological reactance, and resultant "ignoring" or "shielding" behaviors. In this research, the SSO model is also employed, and Wang and Zhu's (2020) survey design is adapted to the investigation of information overload from international events coverage and its influence on the behavior of Chinese college students. The authors believe that this study can contribute to the development of a diagnostic

model for the psychosocial effects of widespread information distribution systems, with a view to their future refinement to promote better mental health and informational outcomes for users.

The various manifestations of international events "information push" are regarded as stressors. Most notably, this takes the form of explicit "push notifications" that users receive on their personal devices. Often accompanied by vibration and sound, these form the propagative mechanism for channels on key social media sites. And not just for information; there are affective and attitudinal components too, as described in Fu et al. (2020) and Wang and Zhu (2020). In addition to push from the platforms themselves, the authors identify inconsistent information quality and excessive peer-to-peer sharing of information as additional stressors. Here the architecture of the platform and its informative culture can be considered generative of degrees of "information push." This is an addition to the existing literature that the authors hope can be carried forward in future research.

In terms of psychological burden, this research is primarily concerned with the exhaustion emotion and users' innate psychic resistance to pertinent information. As regards outcome behaviors, the authors consider two key patterns: "neglect" and "shielding" behaviors. By relating these outcomes to the stressors identified and the psychological changes indicated thereby, the effects of overload emotions on information acquisition processes among social media users can be analyzed.

Overload, Variable Quality, Sharing Behavior, and Social Media Burnout

Information overload is one potential consequence of having more diverse sources of information on the internet, especially where the quality is hard to distinguish, and it is therefore difficult to select and evaluate the information (Shmitt et al., 2018). In an empirical study, Cao and Yu (2019) revealed that excessive social media use for "information-sharing" purposes can actually reduce employees' psychological strain. But social media is a fertile ground for rumormongering that may have unpredictable results for individuals consuming such discourse (Alkhodair et al., 2020). For the COVID-19 pandemic, rumors and misinformation on social media have caused myriad violent incidents the world over and ultimately contributed to poor mental health outcomes for individuals (Hossain et al., 2020). It has been established that anxiety is a primary result of excessive information push from social media (Dhir et al., 2018), and in big events like COVID-19, social media was a key source of anxiety and burnout (Khan, 2021). Information push surrounding international events has overloaded, been of variable quality, and excessive sharing behavior phenomena that may all lead to burnout.

Since individuals can participate in the production and dissemination of information by sharing news on social media, sharing behavior becomes an increasingly influential phenomenon on a social scale (Lee & Ma, 2012). Millennials and Gen Z have higher adoption of social media compared to older generations, and both individual and environmental factors are significant in producing their sharing behaviors (Mulvey et al., 2020)—which suggests an important role for educators and a large potential impact for interventions.

International events information is omnipresent on social media, the quality of the information is inconsistent, and it is difficult to distinguish true from false. Social media users need a lot of time to discern the truth content in information, which inevitably engenders a sense of compassion fatigue or psychological burnout (Han, 2018). In addition, college age users' social networks tend to be continuously expanding, and it is common to have that ever-growing number of online friends constantly sharing news in social media interactions (Kümpel, 2019). Users are likely to suffer from social media burnout due to the pressure created by growing intensity and velocity of information exchange (Han, 2018; Zhang et al., 2016). Pang and Ruan (2023) have positively linked information and communication overload, as well as information irrelevance, to exhaustion and social media discontinuation—specifically WeChat. Information overabundance and fatigue have likewise been tied to lower levels of engagement and motivation (Mao et al., 2024) and to anxiety that can inhibit one's ability work (Wang et al., 2023). Sun and Lee (2023) have shown how information overload can then impede effective risk communication at even a nation-level. Wang et al. (2024a) then describe a

vicious circle of anxious sensitivity to information overload, information avoidance, and psychological distress among college students that calls for timely intervention in order to be understood and to develop appropriate preventative measures.

Hypotheses

Based on the above research, this study proposes 10 hypotheses that together form a hypothetic model. These fall into four categories: exhaustion emotion, psychological resistance, neglect behaviors, and shielding behaviors.

Exhaustion Emotion

User exhaustion or burnout from discourse surrounding major news events is likely affected by the quantity, quality, and intensity of information received—as discussed above. Thus, the initial three hypotheses in this model are as follows:

H1: Excessive international events information push has a significant positive impact on exhaustion emotion among college students.
H2: The inconsistent quality of international events information has a significant positive impact on exhaustion emotion among college students.
H3: Excessive international events information sharing has a significant positive impact on exhaustion emotion among college students.

Psychological Resistance

Brehm (1966) proposed in psychological reactance theory that the individual will try to regain freedom when they feel it threatened or restricted. For social media information, users may perceive certain messaging through push notification services as a barrier to free thinking and will develop active resistance (Lee et al., 2014). Since resistance is an obvious reaction, we propose the following hypotheses:

H4: Excessive international events information push has a significant positive impact on psychological resistance among college students.
H5: The inconsistent quality of international events information has a significant positive impact on psychological resistance among college students.
H6: Excessive international events information sharing has a significant positive impact on psychological resistance among college students.

Neglect Behaviors

Brehm (1966) also hypothesized that information can have adverse impacts on the psychology of the one consuming it. This results in negative emotions and is productive of the phenomena of burnout and resistance discussed above. In order to protect their cognitive ability, users are likely to *ignore* the negative information (Wang & Zhu, 2020). For instance, they may avoid tapping or even reading notifications, checking feeds, and so forth. This paper adapts these "neglect behaviors" from Wang and Zhu (2020), and thereby propose the following hypotheses:

H7: Exhaustion emotion has a significant positive impact on neglect behaviors.
H8: Psychological resistance has a significant positive impact on neglect behaviors.

Shielding Behaviors

It is important to understand exhaustion and discontinuation behaviors among social media users (Bermes, 2021). Faced with a situation where social media frequently pushes relevant information, and friends on social media repeatedly republish relevant articles, users may develop negative emotions such as burnout and psychological resistance. In order to mitigate cognitive processing pressure and protect their cognitive freedom, users could personalize and micromanage their social media feeds, perhaps blocking or muting particular channels, friends, or applications. The authors termed these "shielding behaviors" after Wang and Zhu (2020) and developed the following pertinent hypotheses:

H9: Exhaustion emotion has a significant positive impact on users' shielding behavior.
H10: Psychological resistance has a significant positive impact on users' shielding behavior.

METHODOLOGY

Sampling and Data Collection

This study employed questionnaires for primary data collection. It used the "Jingdongliangyan" mini-program on WeChat to build the questionnaires. As WeChat is the predominant form of digital communication across all of China, this platform was ideal for distributing the survey to college students. The questionnaires were distributed on university WeChat groups by sharing them directly with individual students and by encouraging peer-to-peer sharing, including "Moments," which is forwarding. Over five days in May 2022, 757 valid questionnaires were completed. No incentives were offered. The "Jingdongliangyan" mini-program does not allow participants to submit the survey until it is completed, thus the apparent 100% response rate. It is worth noting, however, that the total pool of students who could view the survey, 6,000, is far higher than the number who chose to participate. Nevertheless, the sample size is still large and includes a representative range of students of various majors, levels, and socioeconomic and sociopolitical backgrounds. Plus, users must be students in order to access the university-moderated groups, and their identities were verified by WeChat and by university staff, thus non-students are necessarily excluded as a fact of the medium. Their basic information is shown in Table 1.

Questionnaire Design

In the questionnaire, all items related to the degree of influencing factors were set at five levels according to a Likert scale, counted as numerical variables "1-5" during analysis—e.g. from strongly agree = 5, Agree = 4, Neither agree nor disagree = 3, Disagree = 2, Strongly disagree = 1. All variables are subjective data, and the survey scale is conventional within the literature.

In addition to the collection of socioeconomic and usage data, the authors drew on Wang and Zhu's (2020) design in positing 20 question items distributed across the seven key factors. Exemplar question items are as follows: for excessive information push, "my social media is flooded with information about international events that I cannot handle"; for inconsistent information quality, "the credibility of videos or pictures of international events are not high"; for excessive information sharing, "friends in social media groups often interrupt my reading by sharing information about international events; for fatigue emotion, "I get tired of international events information on social media"; for psychological resistance, "the large number of articles or posts about international events reminds me of forced reading"; for neglect behavior, "when the likes and upvotes for international events pop up on my device I will pretend that I did not see them"; and for shielding behavior, "I will block chat groups that share international events information frequently."

Table 1. Frequency analysis of basic information from the questionnaires

Basic information	Options	Frequency	Percentage (%)	Cumulative percentage (%)
1. Gender	A. Male	353	46.63	46.63
	B. Female	404	53.37	100.00
2. Education level	A. Undergraduate	682	90.09	90.09
	B. Master	66	8.72	98.81
	C. Doctoral	9	1.19	100.00
3. Permanent residence	A. City	418	55.22	55.22
	B. Countryside	339	44.78	100.00
4. Party affiliation	A. Probationary or party member	141	18.63	18.63
	B. Active party member	238	31.44	50.07
	C. League member	328	43.33	93.39
	D. Without party affiliation	49	6.47	99.87
	E. Other democratic parties	1	0.13	100.00
5. Monthly living expenses	A. 1,000 yuan or less	144	19.02	19.02
	B. 1,001 to 2,000 yuan	554	73.18	92.20
	C. 2,001 to 3,000 yuan	48	6.34	98.54
	D. 3,001 yuan or more	11	1.45	100.00

Note. Datapoints are rounded to two decimal places for legibility.

Reliability and Validity Tests

We used SPSS26.0 statistical software to test the model. We applied its structural equation analysis technology to a total of seven key factors and 27 analysis items. With an effective sample size, 757, over 10 times the number of analysis items, the sample is deemed moderate by confirmatory factor analysis. Firstly, the relationship between the measured factors and analysis items is assessed by factor loading, and the results are shown in Table 2.

Only for item 15.UQI3 (trust in user comments' truth value), as it measures factor2 (inconsistent quality of information), was the absolute value of standardized load coefficient found to be slightly below 0.6, at 0.591, meaning that the measurement relationship is weak. All other values of the standardized load systems were greater than 0.6. Therefore, UQI3 was removed, and factor load analysis was conducted again with all loads demonstrative of a good relationship, as shown in Table 3.

After adjustment, the absolute values of standardized load systems were all greater than 0.6 and significant, which means a good measurement relationship.

For the seven factors and analysis items, confirmatory factor analysis was used. As can be seen from Table 4, average variance extracted (AVE) values of the seven factors are all greater than 0.5, and construct reliability (CR) values are all higher than 0.7, which indicate that the analyzed data have good convergence validity.

As shown in Table 5, the model has good discriminant validity, as for every factor the AVE root value exceeded the absolute value of the correlation coefficient between factors. The model thus has good aggregation and discriminant validity and no common method bias.

Table 2. Table of factor load coefficients

Factor	Measurement items	Nonstandard load factor Coef.	Std. Error	*z* (CR)	*p*	Std. Estimate
Factor1	Excessive information feed	1.000	-	-	-	1.000
Factor1	10. EI1	0.985	0.031	31.328	0.000	0.772
Factor1	11. EI2	1.114	0.030	36.703	0.000	0.825
Factor1	12. EI3	0.879	0.029	30.063	0.000	0.757
Factor2	Inconsistent quality of information	1.000	-	-	-	1.000
Factor2	13. UQI1	1.038	0.033	31.530	0.000	0.788
Factor2	14. UQI2	1.069	0.034	31.580	0.000	0.788
Factor2	**15. UQI3**	**0.871**	**0.045**	**19.391**	**0.000**	**0.591**
Factor3	Excessive Information sharing	1.000	-	-	-	1.000
Factor3	16. EIS1	0.904	0.020	45.032	0.000	0.869
Factor3	17. EIS2	1.081	0.021	51.821	0.000	0.901
Factor4	Exhaustion	1.000	-	-	-	1.000
Factor4	18. F1	0.785	0.032	24.310	0.000	0.670
Factor4	19. F2	1.038	0.031	33.888	0.000	0.789
Factor4	20. F3	1.155	0.025	45.446	0.000	0.873
Factor5	Psychological reactance	1.000	-	-	-	1.000
Factor5	21. PR1	1.005	0.020	50.400	0.000	0.883
Factor5	22. PR2	0.978	0.018	54.543	0.000	0.898
Factor5	23. PR3	0.996	0.019	53.371	0.000	0.894
Factor6	Neglecting behavior	1.000	-	-	-	1.000
Factor6	24. NB1	1.027	0.033	31.015	0.000	0.774
Factor6	25. NB2	0.988	0.035	28.429	0.000	0.741
Factor6	26. NB3	0.963	0.034	28.485	0.000	0.742
Factor7	Shielding behavior	1.000	-	-	-	1.000
Factor7	27. SB1	1.037	0.018	56.959	0.000	0.905
Factor7	28. SB2	0.998	0.015	65.037	0.000	0.926
Factor7	29. SB3	0.944	0.019	49.724	0.000	0.879

Note. CR = construct reliability.

RESULTS

Based on the hypothetic model, path analysis was performed with results shown in Table 6.

Confirmation was found for all the hypotheses pertaining to the causes of emotional exhaustion: H1, H2, and H3. Each of the theorized paths had normalized coefficient values greater than 0 and showed significance at a 0.01 level: H1 ($z = 6.693$, $p = 0.000<0.01$); H2 ($z = 5.023$, $p = 0.000<0.01$); H3 ($z = 14.143$, $p = 0.000<0.01$).

Confirmation was also found for each of the psychological resistance hypotheses: H4, H5, and H6. Normalized path coefficients were all greater than zero, at 0.16, 0.097, and 0.493 respectively, and demonstrated significance at a 0.01 level: H4 ($z = 4.970$, $p = 0.000<0.01$); H5 ($z = 2.750$, $p =$

Table 3. Revised table of factor load coefficients

Factor	Measurement items	Nonstandard load factor Coef.	Std. Error	*z* (CR)	*p*	Std. Estimate
Factor1	Excessive information feed	1.000	-	-	-	1.000
Factor1	10. EI1	0.985	0.031	31.343	0.000	0.772
Factor1	11. EI2	1.114	0.030	36.725	0.000	0.825
Factor1	12. EI3	0.880	0.029	30.080	0.000	0.757
Factor2	Inconsistent quality of information	1.000	-	-	-	0.999
Factor2	13.UQI1	1.047	0.034	30.934	0.000	0.794
Factor2	14.UQI2	1.078	0.035	30.989	0.000	0.795
Factor3	Excessive information sharing	1.000	-	-	-	1.000
Factor3	16. EIS1	0.904	0.020	45.066	0.000	0.869
Factor3	17. EIS2	1.081	0.021	51.863	0.000	0.901
Factor4	Exhaustion	1.000	-	-	-	1.000
Factor4	18. F1	0.785	0.032	24.320	0.000	0.670
Factor4	19. F2	1.038	0.031	33.905	0.000	0.790
Factor4	20. F3	1.155	0.025	45.471	0.000	0.873
Factor5	Psychological reactance	1.000	-	-	-	1.000
Factor5	21. PR1	1.005	0.020	50.418	0.000	0.883
Factor5	22. PR2	0.978	0.018	54.563	0.000	0.898
Factor5	23. PR3	0.996	0.019	53.389	0.000	0.894
Factor6	Neglecting behavior	1.000	-	-	-	1.000
Factor6	24. NB1	1.027	0.033	30.993	0.000	0.774
Factor6	25. NB2	0.988	0.035	28.410	0.000	0.741
Factor6	26. NB3	0.963	0.034	28.465	0.000	0.742
Factor7	Shielding behavior	1.000	-	-	-	1.000
Factor7	27. SB1	1.037	0.018	56.940	0.000	0.905
Factor7	28. SB2	0.998	0.015	65.015	0.000	0.926
Factor7	29. SB3	0.944	0.019	49.706	0.000	0.879

Note. CR = construct reliability.

Table 4. AVE and CR index results

Factor	AVE value	CR value
Factor1	0.712	0.907
Factor2	0.754	0.901
Factor3	0.856	0.947
Factor4	0.709	0.905
Factor5	0.847	0.957
Factor6	0.675	0.891
Factor7	0.863	0.962

Table 5. Discriminant validity: Pearson correlation with AVE square root value

	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
Factor1	0.829						
Factor2	0.481	0.843					
Factor3	0.488	0.361	0.921				
Factor4	0.510	0.429	0.599	0.830			
Factor5	0.409	0.386	0.588	0.735	0.916		
Factor6	0.174	0.334	0.194	0.418	0.512	0.798	
Factor7	0.201	0.265	0.327	0.421	0.546	0.617	0.926

Note. The blue number along the diagonal is the AVE square root value.

Table 6. Summary table of model regression coefficients

X	→	Y	Unnormalized path coefficients	*SE*	*z* (CR value)	*p*	Normalized path coefficient
Excessive information feed	→	The exhaustion emotion of social media users	0.227	0.034	6.693	0.000	0.224
Inconsistent quality of information	→	The exhaustion emotion of social media users	0.168	0.033	5.023	0.000	0.154
Excessive information sharing	→	The exhaustion emotion of social media users	0.363	0.026	14.143	0.000	0.443
Excessive information feed	→	The psychological resistance of social media users	0.115	0.042	2.750	0.006	0.097
Inconsistent quality of information	→	The psychological resistance of social media users	0.204	0.041	4.970	0.000	0.160
Excessive information sharing	→	The psychological resistance of social media users	0.474	0.032	15.012	0.000	0.493
The exhaustion emotion	→	Their neglect behavior	0.087	0.033	2.665	0.008	0.092
The psychological resistance	→	Their neglect behavior	0.365	0.028	13.070	0.000	0.451
The exhaustion emotion	→	Their shielding behavior	0.052	0.039	1.322	0.186	0.044
The psychological resistance	→	Their shielding behavior	0.517	0.034	15.403	0.000	0.517

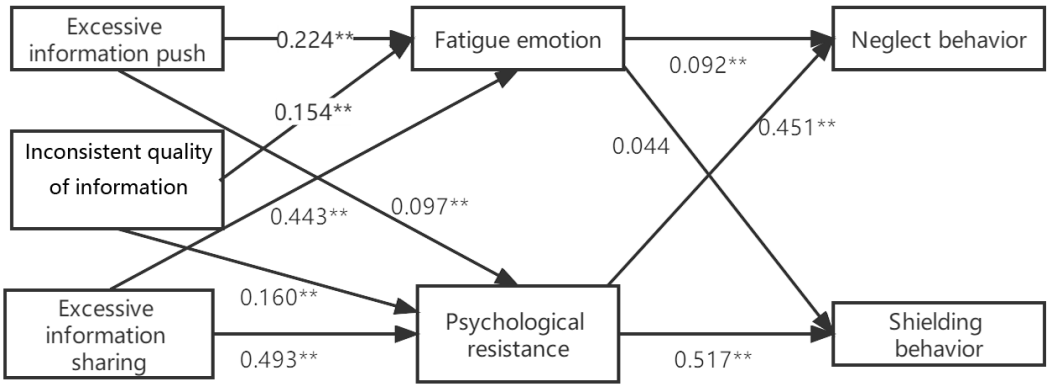
Note. SE = standard error; *p* = statistical significance.

0.006<0.01); H6 ($z = 14.143$, $p = 0.000<0.01$). Excessive information push had profound influences on psychological resistance.

The data likewise provided confirmation for the neglect behavior hypotheses. H7 had a path coefficient of 0.092>0, and H8 had a path coefficient of 0.451>0, each demonstrating 0.01 level significance: H7 ($z = 2.665$, $p = 0.008<0.01$); H8 ($z = 13.070$, $p = 0.000<0.01$).

The data also confirmed hypothesis H10, positing the influence of psychological resistance on performance of shielding behaviors. Only for H9, which tested the influence of social media user's exhaustion emotion on shielding behavior, was data found that contradicted the hypothetic model—the path did not show significance ($z = 1.322$, $p = 0.186>0.05$). Adjusted for the weightings discovered in this study, the final model is presented in Figure 1.

Figure 1. The final model



DISCUSSION

Significance and Explanation of the Model

Frequent push messages from social media will interrupt users' browsing process and provoke exhaustion emotions. This study partially corroborates the recent findings of Pang and Ruan (2023) that exhaustion then exerts a moderating effect on social media use, as realized through neglect behaviors. Fu et al. (2020) provide a taxa of overload stressors in social media, distinguishing system feature overload and social overload from that of sheer volume. But further research was required to elucidate how these different dimensions are interconnected. In the model developed in this research, we relate social overload—in the form of peer-to-peer information sharing around major news events—and system features—in the form of the information pushed by the platform itself—and generate weightings (Figure 1). These were found to stably produce fatigue emotion, psychological resistance, and outcome avoidance behaviors. This work thus offers an important extension of current research in this modelling of the psychological mechanisms that underline social media discontinuation and burnout.

Information push on social media transfers affects and attitudes around major news events to those at a great distance. Latent effects of this diffusion inevitably variegate at the level of reception, but modelling the *mechanisms* of diffusion can help policymakers, institutions, and platforms to plan effective interventions and promote optimal mental health and behavioral outcomes. That development of a healthy informative culture should take account of misinformation and rumormongering that has become a high-profile issue since the COVID-19 pandemic (Khan, 2021; Wang & Zhu, 2020), and this study's weighted model has demonstrated the moderating role played by perceived inconsistencies in information quality (Figure 1).

Excessive information sharing greatly prefigures both psychological reactance and exhaustion emotion, while inconsistent information quality exerts a lesser, though still significant and consistent, influence on both reactance and exhaustion. This study has modelled a strong positive relationship between a platform feature, in information push, and psychological reactance, which in turn produces shielding and neglect behaviors with ostensibly equal force. With effects of push on exhaustion also clearly modelled, it can be seen how each of the components of information overload delineated in this study play important roles both in the psychological and emotional reaction of college students to major news items and in prefiguring their subsequent behavior.

Potential Solutions and Countermeasures

Prior research has used the SSO model to demonstrate a link between the overload of information in social media overuse and poor academic performance (Cao et al., 2018). Recent studies corroborate this (Du & Wang, 2024; Sun et al., 2023), demonstrating a positive influence of social media use on learning burnout in high schoolers. This certainly suggests a need for interventions among school- and university-age userbases. Cao and Yu (2019), however, have shown that even "excessive" peer-to-peer sharing can be beneficial under some circumstances in mitigating psychological strains. It is congruent with this study's model, for instance, that with greater levels of trust in information quality, psychological strains may be reduced. There is thus an implied threshold on the influences of peer-to-peer sharing and of inconsistent information quality. It would follow that push notifications on social media platforms are typically in excess of any analogous threshold, and that platforms—as well as employers or school governors—may wish to lessen these, either by directive and guidance or through direct regulation. This model provides weightings that, with further development and testing, could help to calibrate such interventions.

Additionally, greater levels of social media literacy could help users discern trustful sources and therefore lessen overload synergistically (Heiss et al., 2023). Interventions in rumor control and that help assure facticity could mitigate the adverse effects of inconsistencies in information quality and therefore provide ameliorative moderation of reactance and exhaustion emotion—a suggestion largely corroborated by Wang et al. (2023).

The model clearly captures a consistent relationship between fatigue emotion and reaction and avoidance behaviors in shielding or neglecting. Recent studies (Du & Wang 2024; Heiss et al. 2023; Wang et al., 2024b) have stressed the moderating role of social media literacy, self-control, and "cognitive ability" in avoidance behaviors—consistent with this study's modelling of influences from inconsistent information quality above. This study's findings additionally demonstrate that psychological resistance closely correlates with neglect behaviors, while exhaustion emotion correlates with shielding. The powerfully positive relationship between excessive information sharing and both reactance and exhaustion corroborates previous findings (Sheng et al., 2023; Sun & Lee, 2023; Wang et al., 2024b) on the role of social overload in exhaustion, this study's model brings out the key additional component: push overload, which is highly correlated with both exhaustion emotion and reactance. This is cross-sectional evidence and will need further research to establish causal links, but causality is highly congruent with these findings.

Limitations and Future Research

The negligibly weak relationship that was found between exhaustion emotions and resultant shielding behaviors suggests that the influence may be more nuanced than previously thought. Indeed, the relationship with neglecting behaviors, though statistically significant, was not much stronger. The antecedents in information overload, inconsistent quality, and excessive sharing all reliably produced the exhaustion emotion, as they did psychological resistance, but this did not transfer directly to shielding and neglect behavior in the context of international events coverage as it may have for COVID-19 (Wang & Zhu, 2020). It is our feeling that the effect is simply weaker, given the lesser impact of the former on our respondents' daily lives. It is our hope that future research can corroborate these findings across diverse populations and using diverse methods.

In follow-up to this study, we hope to conduct interviews and focus groups, while making corroborative use of objective measures in quantitative social media analysis. Thus, the antecedents of shielding and neglect behaviors for major news events can be teased out more generally, while becoming less reliant less on self-reporting. Ethnographic interviews in particular would allow us to identify potential moderators, such as personality, which could help in turn to recalibrate the questionnaire and model. A recent study by Sheng et al. (2023) observed how perceived invasion of one's privacy and exposure to cyberbullying may mediate in the production of emotional exhaustion, for instance, providing further user-end variables that may supplement the model, while Wang et

al. (2024b) have explored surveillance anxiety as another potential mediator in the United States, it is something yet to be explored in China as an insightful point for cross-cultural comparison. And though our focus has been on WeChat, far and away the dominant social media platform in China, it will be important in future research to conduct comparative analysis on alternative platforms.

With more data, the psychosocial and behavioral effects of social media can be better abstracted and interventions better calibrated to promote a healthy cyber society. We will continue to iterate on the questionnaire design and tweak the model accordingly.

AVAILABILITY OF DATA AND MATERIAL

The data that support the findings of this study are available at 10.6084/m9.figshare.25451296 [doi].

COMPETING INTERESTS

The authors of this publication declare there are no competing interests.

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CONSENT FOR PUBLICATION

Participants of this study gave their informed consent to participate.

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