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**Integrating Interpersonal Communication Into the Influence of Presumed Media Influence  
Model: Understanding Intentions to Censor and Correct COVID-19 Misinformation on  
Social Media**

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### **Abstract**

We extended the influence of presumed media influence model by taking interpersonal communication into account. Our survey ( $N = 642$ ) results revealed that individuals' attention to COVID-19 information on social media and their engagement in interpersonal communication about the disease independently and jointly affected presumed others' attention. The more that individuals engaged in interpersonal communication, the less that their attention to mediated content factored into how they perceived others' attention to such content. Presumed others' attention, in turn, was positively associated with presuming that others were influenced by COVID-19 misinformation and the intention to correct, but not censor, misinformation.

*Keywords:* presumed media influence, misinformation, correction, censorship, COVID-19

## **Integrating Interpersonal Communication Into the Influence of Presumed Media Influence Model: Understanding Intentions to Censor and Correct COVID-19 Misinformation on Social Media**

Since early 2020, the coronavirus disease 2019 (COVID-19) pandemic has gripped societies around the world. In the process, just as the virus has spread across national boundaries, information about the pandemic has gone viral on media, especially social media. However, the user-generated nature of such social media platforms and their lack of traditional gatekeepers make them communities in which misinformation flourishes (Viswanath et al., 2020), and misinformation about COVID-19 is no exception. A recent study has shown that social media has produced over eighty percent of COVID-19 related misinformation (AI-Zaman, 2022), and exposure to such misinformation could be consequential on individual as well as public health. Against that background, some research has prioritized examining people's subjective perceptions of misinformation (e.g., Kim et al., 2020). Yet, less is currently understood about how people come to perceive others as being influenced by misinformation online. Beyond that, the ways in which misinformation's perceived influence on other audience members affect people's corresponding actions also remain understudied.

In response, we sought to identify the mechanism underlying intentions of both censoring misinformation about COVID-19, or "COVID-19 misinformation," and refuting such misinformation. To that end, we employed the influence of presumed media influence (IPMI) model, a theoretical framework describing how people gauge mass communication's influence on others and react based upon those perceptions. In particular, we applied the IPMI model to examine individuals' intentions to censor and correct misinformation about COVID-19 on social media early during its outbreak in China. In the process, we extended the framework by

introducing interpersonal communication, chiefly to investigate whether and, if so, then how exposure to mass communication via social media and engagement in interpersonal communication independently and jointly affected presumed others' attention to COVID-19 information on social media. Using those results, we also aimed to determine the presumed influence of misinformation on others and its effect on subsequent behavioral intentions. Our findings are expected to advance theory about IPMI and illuminate a potential mechanism by which media consumption and interpersonal communication affect intentions to censor and correct misinformation.

### **The IPMI Model**

Based on the notion of persuasive press inference (Gunther, 1998), the IPMI model posits that, upon paying attention to content in mass communication, individuals tend to assume that others would similarly view and pay attention to the same content (Gunther & Storey, 2003). Furthermore, by presuming that others are paying a similar level of attention, individuals judge the content's influence on others and react based upon those perceptions (Gunther & Storey, 2003). Despite being rooted in the theory of third-person effect (Davison, 1983), the IPMI model takes a broader perspective, because the attitudinal and behavioral consequences that it describes do not depend upon a key premise of that effect: a perceived divergence between media effects on oneself versus others. As such, whereas the third-person effect suggests that the gap between perceived media effects on others and oneself drive behavioral outcomes, the IPMI model maintains that perceiving media's influence on others can alone drive behavioral outcomes.

Although the IPMI model was initially developed in the pre-social media age, it could fit the context of social media. Social media enable a top-down and one-to-many communication by allowing users to disseminate information to a massive audience in a timely manner, which can

be regarded as a form of mass communication (Carr & Hayes, 2015). Nowadays, social media not only enable the sharing and reception of top-down health information authorities and legacy media outlets, but also bottom-up information generated by ordinary people (Z. Chen et al., 2019). Hence, the IPMI model which aims to explain the effects of mass communication is applicable to the current research context. In the following paragraphs, we reviewed each premise proposed by the IPMI model and addressed how each of them could be applied in the context of social media.

The first premise of the IPMI model—a positive association between individuals' personal attention and presumed others' attention to mass communication—has been amply documented across various types of content and forms of media outlets. For instance, based upon their own attention to antismoking messages in magazines and on TV, the radio, billboards, and the Internet, adolescents in the United States estimated that their close friends and peers at school paid a similar level of attention to such messages (Paek & Gunther, 2007). In addition, American adolescents were also found to gauge their peers' attention to advertisements displayed online or in traditional mass media outlets with reference to their own attention to the same advertising (Chia, 2010). More recently, a national survey conducted in Singapore revealed that individuals' attention to messages on mass media, including the Internet but excluding news websites, about the benefits of nano-enabled food was positively associated with their estimation of others' attention to the similar content (Ho et al., 2020).

One explanation for the positive relationship between one's personal attention and presumed others' attention to media content is that people are naïve social scientists who tend to take mental shortcuts in making inferences and explaining how the world works (Eveland et al., 1999; Heider, 1958). Given the extrapolation effect, individuals exposed to a specific kind of

content in mass communication attribute representativeness to the content and, in turn, assume that others are exposed to the same content to a similar degree (Gunther, 1998; Park, 2005). If that content is interpreted as having unprecedented power to reach a wide audience, then individuals also likely assume its inevitable influence on the opinions of others (Gunther & Storey, 2003). Although researchers have not yet examined how individuals' attention to social media content is associated with presumed others' attention to it, they have considered the Internet to be a channel of mass communication and shown extensive, consistent evidence of a positive association between personal attention and presumed others' attention to mass communication online. Thus, considering the first premise of the IPMI model as well as empirical evidence in the literature, we formulated Hypothesis 1 (H1):

**H1:** Individuals' personal attention to COVID-19 information on social media is positively associated with presumed others' attention to the same content.

Assuming that others pay similar attention to the same content circulating in mass communication, individuals tend to perceive such communication as swaying what others believe (Gunther & Storey, 2003). Of course, the positive association between others' presumed attention to media content and its presumed influence on others also derives from a lay theory—namely, the higher the perceived exposure to media content, the stronger its perceived influence on others (Eveland et al., 1999). Such a positive relationship has been repeatedly documented in studies applying the IPMI model across various types of content in mass communication, including in advertising (Chia, 2010), pro- and antismoking messages (Gunther et al., 2006), and public service announcements about e-cigarettes on YouTube (Cho et al., 2021). Extending such evidence to our study's context, we expected that the level of presumed others' attention to COVID-19 information on social media would be positively

associated with the magnitude of such misinformation's presumed influence on others.

Social media have long been criticized for propagating what Chou et al. (2018) have termed *health-related misinformation*, defined as “a health-related claim of fact that is currently false due to a lack of scientific evidence” (p. E1). By analyzing data about social media, scholars have found that health-related misinformation prevails across domains of health-related knowledge on social media platforms, including about naturopathic cancer treatments on Weibo (L. Chen et al., 2018) and anti-vaccine conspiracy theories on Twitter (Jamison et al., 2020). Social media platforms were also identified as highly popular channels for people to assess timely news about public health crises and fulfill their need for information during them (Gui et al., 2017). However, the general, urgent demand for information during such crises can easily convert social media platforms into hubs for misinformation. For instance, researchers have documented large numbers of tweets and retweets on Twitter containing misinformation about the Zika fever and Ebola during those epidemics (e.g., Ghenai et al., 2017; Oyeyemi et al., 2014). Given such findings, it is unsurprising that COVID-19 misinformation has proliferated on social media, especially during early stages of the outbreak (Leskin, 2020), a period marked by phenomenal uncertainty and confusion around the world. Similarly unsurprising, the ready acceptance of dubious ideas promoted by such misinformation was also found to prompt risky behaviors regarding COVID-19 prevention (Enders et al., 2020). Therefore, we expected that individuals who assume that others pay attention to COVID-19 information on social media will also perceive them to be influenced by COVID-19 misinformation on social media, as stated in Hypothesis 2 (H2):

**H2:** Presumed others' attention to COVID-19 information on social media is



positively associated with presumed influence of COVID-19 misinformation on others.

### ***Behavioral Outcomes of the IPMI Model***

By anticipating mass media content's influence on others, as suggested by the IPMI model, individuals will react based upon the expected consequences of media influence (Gunther & Storey, 2003). In their work, Tal-Or et al. (2009) pinpointed three behavioral outcomes of the IPMI model: prevention, coordination, and normative influence. The first, *prevention*, refers to an intention to limit or stop the dissemination of a message believed to be harmful (Tal-Or et al., 2009). *Coordination*, by contrast, is a response to an already disseminated message in which individuals determine how they should act to achieve their goals based on how they expect the message to affect others' intentions and/or behaviors (Tal-Or et al., 2009). Last, *normative influence* refers to the dynamic in which individuals, perceiving media to promote the adoption of certain social norms, may either uphold or defy those norms (Tal-Or et al., 2009). As such, normative influence has been more likely when content in mass communication expresses certain attitudes or opinions, as in pro- and antismoking messages (Gunther et al., 2006), messages about the benefits of nano-enabled food (Ho et al., 2020), and media coverage promoting health prevention behaviors (Hong & Kim, 2019). In other words, only when mass communication content presents a consistent and clear stance toward a certain issue, it is likely to wield a normative influence. However, when it comes to misinformation on social media, it is difficult to conclude that all the misinformation promotes attitudes/opinion bearing a single direction. In fact, according to research findings, the content of COVID-19 misinformation on social media is diverse, and conflicting and opposite opinions on COVID-19 and its preventive measures have been endorsed by the misinformation (Brennen et al., 2020; Enders et al., 2020). For that reason, the first two behavioral outcomes of the IPMI model seemed more applicable to our study's

context, in which the content of misinformation is likely to be heterogeneous. Thus, we expected that individuals who seek to reduce the anticipated, undesirable consequence of COVID-19 misinformation on others likely intend to either censor its dissemination on social media (i.e., prevention) or correct it and thereby shield others from its undesirable impacts (i.e., coordination).

Preventive reactions have long been examined in research on the third-person effect and IPMI (Gunther, 1995; McLeod et al., 1997; Rojas et al., 1996). In that literature, endorsing the censorship of mediated content has been characterized as a typical action taken to restrict such content's presumed influence. For instance, individuals who believe that violent content on TV can harm their children tend to advocate monitoring media content (Hoffner & Buchanan, 2002). In such cases, the underlying rationale is that people who interpret communication as adversely impacting others seek to limit that communication's negative power by censoring it. In the particular case of online misinformation, research has shown that people indeed tend to think that remote others are heavily and negatively influenced by misinformation (Ștefăniță et al., 2018). Because online misinformation seems to adversely influence others and because censorship is an established reaction to media's perceived influence (Cohen & Weimann, 2008), we expected that influence to be positively associated with individuals' intention to support the censorship of misinformation on social media.

By contrast, coordination typically manifests in less unified, context-dependent ways. To investigate how people might address the potential undesirable consequences of misinformation's spread on social media, we adopted a behavioral outcome proposed by Sun et al. (2008) called *corrective action*. The outcome suggests that when already disseminated mass communication is presumed to have an undesirable or ambiguous influence, people may take

“direct educational or protective measures” to shield others in their immediate social circles from the content (Sun et al., 2008, p. 260). A typical example of corrective action is parental mediation, in which parents may actively discuss media content with their children to minimize its harmful impacts—for instance, on aggressive tendencies (e.g., Nathanson, 1999). Initially, corrective action was conceptualized such that so-called “others” needed to be in immediate social contact with the person in order to be directly informed or protected. However, that restriction has partly eroded in the era of new digital technologies. Today, because social media platforms allow people to easily contact and communicate directly with others beyond their offline social circles, corrective action geared toward unfamiliar, even unknown, but nevertheless reachable others can also occur on such platforms. In support, studies have shown how individuals engaged in corrective action on social media—for instance, by sharing content against the Islamic State (Golan & Lim, 2016), engaging in political discussions and events (Tsang & Rojas, 2020), and correcting anti-vaccination information (Sun et al., 2022)—all to educate or protect others liable to suffer from the negative influence that certain content on social media was presumed to have.

Therefore, considering past findings about the behavioral outcomes of the IPMI model, we expected individuals to engage in both preventive and coordinative behaviors to reduce the presumed power of COVID-19 misinformation on social media, as articulated in Hypothesis 3 (H3):

**H3:** The presumed influence of COVID-19 misinformation on others is positively associated with intentions to (a) censor and (b) correct such misinformation on social media.

### **The Role of Interpersonal Communication in the IPMI Model**

Although mass communication and interpersonal communication have often been

regarded as two distinct processes of communication, scholars have also recognized the false dichotomy between them (Chaffee, 1982; Reardon & Rogers, 1988). In everyday life, people do not receive information from mass media in a vacuum. As Katz and Lazarsfeld (1955) noted more than six decades ago, daily interactions and personal connections facilitate the dissemination of information from mass media to individuals who do not actively pay attention to such media. More recently, Southwell and Yzer (2007) identified interpersonal communication's three possible roles in processes of mass communication—as an outcome, a mediator, or a moderator—which also provides a framework for conceptualizing its role in the IPMI model.

In research applying that model, Chia (2010) studied how interpersonal communication could stem from one's personal attention to mass communication as well as mediate the relationship between personal attention and presumed influence of the mediated content on others. Her findings showed that adolescents' attention to advertisements was directly and positively associated with how often they communicated with their parents and friends about the consumption-related topics addressed by the advertisements. In turn, the frequency of interpersonal conversations was positively associated with the adolescents' perceptions of their parents' and friends' materialism as a presumed consequence of their becoming informed about the advertisements. The findings thus provide valuable insights into ways of integrating interpersonal communication and mass communication into the IPMI model.

Nevertheless, interpersonal communication's potential moderating role in the model has gone unexplored. Theoretically, people could at once be exposed to mediated content and engage in interpersonal conversations about a certain social trend—in our case, the COVID-19 pandemic. In support, interpersonal communication has long been characterized as another

source of information, along with mass media, that people access to seek and receive information about health risks (Coleman, 1993). Even so, and despite research on how mass communication and interpersonal communication could separately and directly affect whether individuals perceive risks (e.g., Coleman, 1993; Ho et al., 2011), scholars have rarely investigated whether those two communication processes could, no matter independently or jointly, affect individuals' perceptions of perceived media effects.

Because processes of mass communication and interpersonal communication can and do occur simultaneously in everyday life, the potential moderating role of interpersonal communication in the IPMI model warrants examination. As the model suggests, individuals rely on their own attention to mass communication in estimating others' attention to the same content regarding to a focal topic, in this case COVID-19. By extension, the parallel question is thus whether interpersonal communication about the same topic acts as an additional indicator in gauging others' attention to the same, mediated content. On top of that, do personal attention and interpersonal communication interact in the process of affecting presumed others' attention? To probe those dynamics, we developed two research questions (RQs) for our study:

**RQ1:** How does interpersonal communication about COVID-19 affect presumed others' attention to COVID-19 information on social media?

**RQ2:** Does interpersonal communication interact with personal attention to COVID-19 information on social media in affecting presumed others' attention to such information? If so, then how does their interaction affect presumptions about others' attention?

## **Method**

### **Participants and Procedure**

We conducted an online survey in China during the first two weeks of February 2020—

that is, beginning a week after the lockdown of Wuhan, the capital city of Hubei Province, China, and the supposed epicenter of the COVID-19 outbreak. During that period, the number of confirmed cases of COVID-19 soared in China, from 11,821 on February 1 to 50,054 on February 15 (World Health Organization, 2020a, 2020b).

We recruited participants from the online panels of a third-party online survey company, Wenjuanxing ([www.wjx.cn](http://www.wjx.cn)), a large survey company based in China that hosts opt-in online panels across the country. Ultimately, we recruited 642 adults ( $n = 341$  women, 53.1%) from three locations—Beijing (31.9%), Hubei Province (32.6%), and Hainan Province (35.5%)—located in northern, central, and southern China, respectively, who were 31.28 years old on average ( $SD = 9.67$ ). Their level of education ranged from elementary school to graduate school, and approximately 64.0% of them ( $n = 411$ ) had earned a bachelor's degree. After providing their consent to participate, the participants answered questions about the study's variables, their frequency of social media, and their demographic characteristics.

## **Measures**

We adapted measures for the variables in the IPMI model and the frequency of interpersonal communication from Chia (2010) and measures for the censorship and correction of misinformation from Lim (2017).

### ***Personal Attention to COVID-19 Information on Social Media***

Participants' personal attention to COVID-19 information on social media was measured with one item—"How much attention have you paid to COVID-19 information on social media?"—answered on a 7-point scale ( $M = 6.41$ ,  $SD = 0.99$ ), ranging from 1 (*none at all*) to 7 (*an extreme amount*).

### ***Interpersonal Communication About COVID-19***

To assess participants' frequency of interpersonal communication about COVID-19, we asked them to indicate how often they had discussed COVID-19 with their (a) family members, (b) relatives, and (c) friends on a 5-point scale, ranging from 1 (*never*) to 5 (*very frequently*). We averaged the three items to create a scale for interpersonal communication ( $\alpha = .78$ ,  $M = 3.72$ ,  $SD = 0.83$ ).

#### ***Presumed Others' Attention to COVID-19 Information on Social Media***

To measure the variable of presumed others' attention, we asked participants to estimate how much attention others had paid to COVID-19 information on social media on a 7-point scale ( $M = 6.23$ ,  $SD = 1.11$ ), ranging from 1 (*none at all*) to 7 (*an extreme amount*).

#### ***Presumed Influence of COVID-19 Misinformation on Others***

We also asked participants to estimate to what extent (a) others, (b) their family members, (c) their relatives, and (d) their friends had been influenced by COVID-19 misinformation on the same 7-point scale, from 1 (*none at all*) to 7 (*an extreme amount*). We averaged the four items to create a scale of presumed influence,  $\alpha = .90$ ,  $M = 4.21$ ,  $SD = 1.52$ .

#### ***Intention to Censor Misinformation***

To assess participants' intention to censor misinformation, we asked them to indicate their agreement with three items—(a) “COVID-19 misinformation should be banned,” (b) “COVID-19 misinformation should be closely monitored and controlled by authorities,” and (c) “Information about COVID-19 should be censored by authorities prior to its publication on social media”—on a 7-point scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The three items were averaged into a scale of intention to censor misinformation about COVID-19 on social media ( $\alpha = .84$ ,  $M = 6.13$ ,  $SD = 1.00$ ).

#### ***Intention to Correct Misinformation***

To measure intention to correct COVID-19 misinformation on social media, we asked participants to report their likelihood of engaging in three behaviors on social media—(a) leaving comments to inform others of the harm of COVID-19 misinformation, (b) sharing news or information refuting COVID-19 misinformation, and (c) sharing news or information reporting the harmful consequences of COVID-19 misinformation—on a 7-point scale, ranging from 1 (*very unlikely*) to 7 (*very likely*). We averaged the three items to create a scale of intention to correct COVID-19 misinformation on social media ( $\alpha = .84$ ,  $M = 5.32$ ,  $SD = 1.20$ ).

### ***Frequency of Social Media Use***

Participants reported how frequently they use social media on (a) weekdays and (b) weekends on a 5-point scale, ranging from 1 (*never*) to 5 (*very frequently*). We averaged the two items to measure social media use frequency ( $r = .71$ ,  $p < .001$ ,  $M = 4.23$ ,  $SD = 0.78$ ).

### **Data Analysis**

We performed structural equation modeling (SEM) in Mplus version 7.0 to assess the model fit and test the relationships between variables. Frequency of social media use, entered as an observed variable, and age, gender, and level of education were included as control variables in the model. The model's fit was assessed based on four criteria: (a) the relative chi-square ratio ( $\chi^2/df$ ), which should not exceed 5.00 (Wheaton et al., 1977); (b) the root mean square error of approximation (RMSEA), which should not exceed .08 (Hu & Bentler, 1999); and values for (c) the comparative fit index (CFI) and (d) the Tucker–Lewis index (TLI), both of which should exceed .90 (Hu & Bentler, 1999).

Participants' personal attention to COVID-19 information on social media and interpersonal communication about COVID-19 were entered as observed variables in SEM. These two variables were also standardized to create the interaction term personal attention  $\times$



interpersonal communication. Presumed others' attention to COVID-19 information on social media, measured using a single item, was also an observed variable. Otherwise, all of the study's other variables were latent variables in SEM. To improve the model's fit, we correlated four pairs of measurement errors as indicated by the modification indices.

### Results

We first conducted a confirmatory factor analysis on the measurement model, and the goodness-of-fit statistics indicated a good fit to the data,  $\chi^2 = 47.49$ ,  $df = 28$ ,  $\chi^2/df = 1.70$ , CFI = .99, TLI = .99, RMSEA = .033, 90% confidence interval (CI) of RMSEA [.015, .049]. Factor loadings for all items exceeded .60 and thereby indicated acceptable measurement validity. Next, to evaluate our hypothesized model (Figure 1), we performed full SEM, which revealed an acceptable level model fit,  $\chi^2 = 353.45$ ,  $df = 95$ ,  $\chi^2/df = 3.72$ , CFI = .94, TLI = .91, RMSEA = .065, 90% CI of RMSEA [.058, .072]. Thus, the proposed model seemed to be supported by the data.

H1 predicted a positive relationship between personal attention to COVID-19 information on social media and presumed others' attention. By extension, RQ1 inquired into the relationship between one's interpersonal communication about COVID-19 and presumed others' attention. Among the results, individuals' attention to ( $\beta = .49$ ,  $p < .001$ ) and interpersonal communication about COVID-19 ( $\beta = .07$ ,  $p = .038$ ) were positively associated with presumed others attention to such information on social media. Thus, the data were consistent with H1.

By contrast, RQ2 inquired into whether personal attention and interpersonal communication jointly affect presumed others' attention. The results indicated that the interaction term personal attention  $\times$  interpersonal communication was negatively associated with presumed others' attention ( $\beta = -.12$ ,  $p < .001$ ). To probe the interaction term, we employed PROCESS

macro (Model 1) with 5,000 bootstrapped samples (Hayes, 2018) and included the control variables in the model as covariates. The results revealed that the interaction term personal attention  $\times$  interpersonal communication significantly affected others' presumed attention to COVID-19 information on social media,  $b = -0.12$ , 95% CI [-0.19, -0.05],  $t = -3.49$ ,  $p < .001$ . As detailed in Table 1, we also estimated the conditional effects of personal attention on presumed others' attention with values of interpersonal communication corresponding to  $M \pm SD$ . Specifically, compared with ones who engage less in interpersonal communication ( $b = 0.65$ ,  $t = 16.20$ ,  $p < .001$ ), participants who reported frequently communicating with others about COVID-19 relied less on their own attention to estimate others' attention to such information on social media ( $b = 0.45$ ,  $t = 7.57$ ,  $p < .001$ ).

As for the other hypotheses, H2 predicted a positive relationship between presumed others' attention to presumed influence of misinformation on others, which H3 predicted would be further positively associated with intention to censor misinformation (i.e., H3a) and correct misinformation (i.e., H3b). The results showed that presumed others' attention to COVID-19 information on social media was positively associated with the presumed influence of such misinformation on others ( $\beta = .09$ ,  $p = .036$ ), as consistent with H2. In addition, COVID-19 misinformation's presumed influence on others was positively associated with intention to correct such misinformation on social media ( $\beta = .13$ ,  $p < .004$ ) but not significantly associated with support for misinformation censorship ( $\beta = .039$ ,  $p > .05$ ). Thus, the data were consistent with H3b but inconsistent with H3a.

## **Discussion**

Amid the confusion and panic created by the outbreak of COVID-19, it seems a truism that people have been extremely attentive to mediated content about the public health crisis.

Social distancing, a recommended and sometimes required practice for reducing the risk of COVID-19 infection, has particularly made mass communication a more prominent process than interpersonal communication for accessing relevant information about the disease. However, as shown by our findings from a survey with a large sample conducted in the initial stages of the COVID-19 outbreak in China, personal attention to COVID-19 information on social media and engagement in interpersonal discussions about the pandemic independently and jointly affected individuals' presumed others' attention to such information. In turn, that attention influenced COVID-19 misinformation's presumed influence on others and people's intention to correct such misinformation on social media. Those findings enhance the IPMI model by acknowledging the coexistence of mass communication and interpersonal communication and, more importantly, documenting the latter's moderating role in the model. We also applied the IPMI model to investigate intentions to censor and correct COVID-19 misinformation on social media, which afforded valuable insights into understanding a mechanism that could explain people's engagement in combating the misinformation during the first pandemic experienced in the era of social media.

As suggested by the IPMI model, one's personal attention to mass communication serves as a key indicator for their presumption that others pay attention to the same mediated content (Gunther & Storey, 2003). In our study, we examined the role of personal attention and the parallel role of interpersonal communication in affecting presumed others' attention to such content. The findings indicated that both personal attention and interpersonal communication were positively and directly associated with presumed others' attention, although interpersonal communication's effect size was smaller than personal attention's. Thus, regarding certain social issues, individuals seem to rely on their own attention to relevant content in mass communication

and their conversations with others about the issues as a means to estimate others' attention to similar content. The effects of the two communication processes, however, demonstrated tradeoffs with each other. For instance, the more that individuals engage in interpersonal communication about an issue, the less that they depend on their own attention to mediated content in gauging others' attention to it.

The negative interaction effect between personal attention and interpersonal communication could be explained as a process of uncertainty reduction. As naïve social scientists, individuals primarily rely on their own attention to mass communication in estimating other's attention to it as well (Eveland et al., 1999; Gunther, 1998). Individuals' engagement in interpersonal communication, moreover, may provide information about others' knowledge and understanding of the social issue being discussed. Thus, it could serve as another indicator of estimating others' attention to mass communication and allow individuals to calibrate the estimation and thereby depend less on personal attention to such communication. In fact, interpersonal communication's moderating role in mass communication has been addressed in other theories of political communication, including in the differential gain model, which suggests that political talk intensifies the effects of news exposure on political participation (Scheufele, 2001). However, counter to that model, our findings attest to a negative interaction between the communication processes and a cognitive instead of behavioral outcome. In the future, researchers should therefore probe the moderating effects of interpersonal communication in mass communication on cognitive, affective, and behavioral outcomes.

Our findings additionally suggest that presumed others' attention to COVID-19 information on social media could prompt subsequent behaviors in light of COVID-19 misinformation's presumed influence on others. Although we expected two types of behavioral

outcomes to arise—prevention and coordination—the association between such misinformation’s presumed influence on others and one’s intention to censor misinformation was not significant. Along similar lines, research conducted in the United States has shown that such a restrictive intent toward mediated content was weak when it came to news (e.g., Salwen & Driscoll, 1997), even when a harmful influence was perceived, perhaps due to U.S. society’s deep commitment to the First Amendment (Tal-Or et al., 2009). A more recent study on fake news on social media also revealed that U.S. participants were more willing to support media literacy education than news censorship upon perceiving a major detrimental effect of fake news on others (Jang & Kim, 2018).

Nevertheless, in China, where media censorship is rather common (Bamman et al., 2012), the belief in freedom of speech may not explain why the intention to censor misinformation was not a significant behavioral outcome in our study. Instead, such findings could be due to the context of the pandemic, in which people, generally anxious and wanting to be fully informed, have turned to social media for timely information about the crisis. However, in wanting to be fully informed, people may have also been inclined to allow the free and open dissemination of COVID-19 information on social media, even at the risk that misinformation could also be propagated. On top of that, the first recognition of the outbreak posted on social media from medical professionals in Wuhan was regarded by authorities as a false rumor (Green, 2020). That anecdote might also have urged people to gauge the value of open, transparent information exchange online and reduced their willingness to support the censorship of misinformation, even misinformation perceived to adversely influence others.

Among our other findings, a positive association emerged between misinformation’s presumed influence on others and the intention to correct misinformation on social media. That

result is consistent with literature on corrective actions (Sun et al., 2008), because the presumed influence of misinformation was seen to be harmful and because individuals tended to want to correct the presumed, undesirable impact of such mediated content on others. In fact, even when the others in question operated outside participants' everyday social circles, participants were driven to take measures to minimize the presumed harmful effects. Thus, to literature identifying information sharing (Golan & Lim, 2016) and online engagement in political talk and participation (Tsang & Rojas, 2010) as corrective actions, our study contributes evidence that people indeed correct misinformation as a form of corrective action in online contexts.

### **Limitations and Future Research**

Our study has shed light on several aspects that researchers should consider when examining the joint effect of mass communication and interpersonal communication on individuals' responses to misinformation. First, as many studies involving the IPMI model, we relied on cross-sectional survey data to test our hypotheses and answer the RQs, which may have limited causal inference. Nevertheless, following the well-established theoretical model in designing our research and in analyzing the dataset, we found justification for our proposed model and findings. Employing a longitudinal research design to study how personal attention to mass communication and interpersonal discussions jointly affect individuals' responses to misinformation could further advance the theoretical framework.

Second, we examined the effects of individuals' personal attention to information about COVID-19 on social media. In so doing, we primarily considered the mass communication function of social media in delivering news and information to the general public. However, because social media also enables interpersonal communication on its platforms, researchers should aim to scrutinize the different communication processes occurring on social media and

examine how those processes may shape individuals' correction of misinformation on such platforms.

Third, following past research that has involved introducing the effects of mass media exposure and interpersonal communication into the IPMI model (Chia, 2010), we measured the frequency of interpersonal communication about a focal topic (i.e., COVID-19). However, the frequency of interpersonal communication provided minimal information about its context or content. As a result, several lingering questions warrant further exploration, including about who gets involved in those conversations, what messages people have constructed during their conversations, and in which channels (e.g., online or face-to-face) the conversations have occurred. Future research on media effects could also refine the conceptualization and operationalization of interpersonal communication as a means to study the impact of messages shared via interpersonal communication and how exposure to mass communication affects individuals' beliefs and behavior.

Fourth, China has developed its own digital media system which is to some extent unique. For instance, the Chinese government employs Internet censorship, such as using various filtering and blocking strategies (Bamman et al., 2012). Based on the key terms used by users, social media contents are being filtered and deleted by the authorities (Bamman et al., 2012). Under these circumstances, Chinese people might perceive and react to (mis)information on social media in a different manner compared with people from other regions with a more open media system. Thus, future research should replicate the current findings in other social contexts to verify such a theoretical framework.

## **Conclusion**

Given the prevalence of misinformation during the COVID-19 pandemic, especially on social media, researchers have yet to fully understand how the public has confronted the challenges created by the misinformation. Our findings, stemming from the IPMI model, suggest that ordinary social media users do take responsibility for mitigating misinformation's negative influence, following their processes of gauging that influence via their personal attention to related information and their interpersonal discussions about the topic. Our findings also indicate that interpersonal communication is indispensable in mass communication, which is a promising domain to advance mass communication theory in the era of social media.



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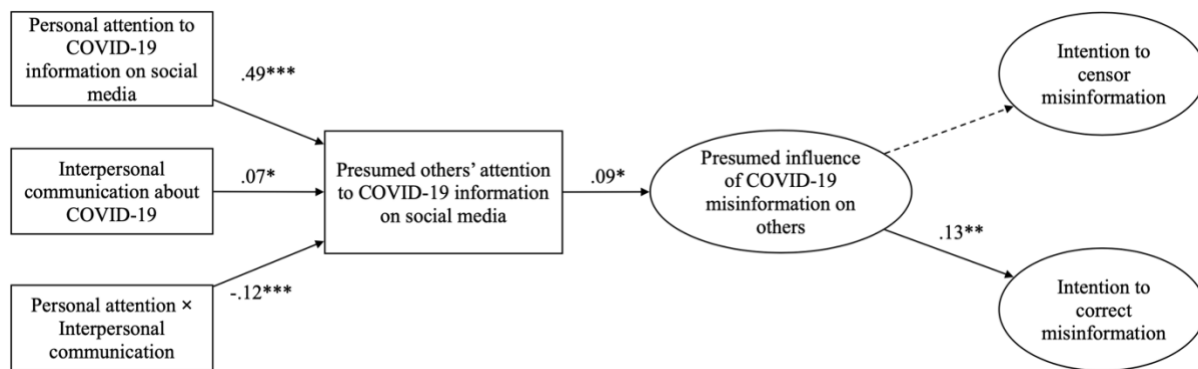
**Table 1**

*Conditional Effects of Personal Attention on Presumed Others' Attention by the Frequency of Interpersonal Communication*

Frequency of interpersonal communication	<i>b</i> ( <i>SE</i> )	<i>p</i>	95% CI
2.89 (−1 <i>SD</i> )	0.65 (0.04)	<.001	0.57, 0.73
3.72 ( <i>M</i> )	0.55 (0.04)	<.001	0.47, 0.63
4.55 (+1 <i>SD</i> )	0.45 (0.06)	<.001	0.33, 0.56

**Figure 1**

*Results of Structural Equation Modeling for the Influences of Personal Attention and Interpersonal Communication on Intentions to Censor and Correct Misinformation.*



*Note.* The age, gender, level of education, and frequency of social media use of participants ( $N = 642$ ) were included as covariates in the model.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

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