# Consuming information related to COVID-19 on social media among older adults and its associations with anxiety, social trust in information, and COVID-safe behaviours: Cross-Sectional Survey

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## *Abstract*

**Background:** COVID-19-related information on social media is overabundant and sometimes questionable, resulting in an "infodemic" during the pandemic. While previous studies suggest social media usage increases the risk of developing anxiety symptoms, how induced anxiety affects attitudes and behaviours is less discussed in the literature, let alone during a global pandemic. Although older adults may not use digital media as extensively as younger adults, they use social media differently to address information needs. Little is known about the effect of using social media during a pandemic on their anxiety, social trust in information, and behaviours to avoid contracting COVID-19.

**Objective:** To investigate the associations between using social media for COVID-19-related information and anxiety symptoms and the mediation effect of anxiety symptoms on social trust in information and COVID-safe behaviours among older adults.

**Methods:** A cross-sectional telephone survey was conducted in Hong Kong between May and August 2020 among service recipients of local NGOs providing active aging activities or mental health services. A rapid warm-call protocol was developed to train social workers and volunteers from particpant NGOs to conduct the telephone survey that included questions related to COVID-safe behaviours, social trust in information, social media use, anxiety and depressive symptoms, and sociodemographic information. The number of confirmed COVID-19 cases at the community level was used to account for the risk of contracting COVID-19, which may prompt COVID-safe behaviours and affect social trust in information. OLS regressions examined the associations between social media use and anxiety symptoms, and how they were associated with social trust in information and COVID-safe behaviours. Structural equation modelling further mapped out these relationships to identify the mediation effects of anxiety symptoms.

**Results:** This study collected information regarding 3421 adults aged 60 years and older. Use of social media for COVID-19-related information predicted more anxiety symptoms and lower social trust in information but had no significant relationship with COVID-safe behaviours. Anxiety symptoms predicted lower social trust in information and more COVID-safe behaviours. Lower social trust in information was predicted by social media usage, mediated by anxiety symptoms, while no mediation effect was found in COVID-safe behaviours.

**Conclusions:** Older adults who rely on social media for COVID-19-related information are exposed to a higher risk of anxiety if they, while showing mixed effects on attitudes and behaviours. Social trust in information may be challenged by unverified and contradictory information online. The negligible impact on COVID-safe behaviours suggested social media may have caused more confusion than consolidating a consistent effort against the pandemic. Media literacy education is recommended to mitigate the negative effects of social media usage, promote critical evaluation of it and responsible sharing among older adults.

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# Original Manuscript

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**Keywords**: COVID-19, anxiety, social media, infodemic, Hong Kong

## Introduction

The COVID-19 pandemic is the first in history in which technology and social media have been used on a massive scale to keep people safe, informed, productive, and connected [1]. Although older adults are arguably less tech-savvy and do not use social media as often as younger adults, previous studies suggest that using social media for communication may help maintain relationships and prevent loneliness among older adults while having the potential to enhance health-related knowledge through information seeking [2,3]. However, the overabundance of information, especially misinformation about the COVID-19 pandemic because of its novelty and associated uncertainty, is fuelling an infodemic [4]. Since the pandemic is likely to be enduring, its prolonged impact on mental health is anticpated, rendering it an important research and practice priority [5]. Therefore, effort should be made to understand the role of social media use in mental health among older adults during the COVID-19 pandemic.

Exposure to mass media in crises has been associated with anxiety symptoms and distress [6,7]. Meanwhile, the use of social media presents a higher risk of having anxiety disorder [8], where passive information consumption such as reading the news, is associated with stronger anxiety symptoms [9,10]. The characteristics of social media and the way older adults consume it may further facilitate the spread of anxiety during a public health crisis such as the COVID-19 pandemic. Most recent evidence suggests an association between social media use and increased anxiety symptoms duirng the pandemic [11–13]. Researchers suggest that in the epicentre, Wuhan, this association could be a result of the fear inflicted by misinformation circulating online, while social media amplified widespread nervousness and worry [14]. Previous experiences in the Korean MERS outbreak also demonstrated the positive relationship between social media exposure and higher perceived public health risks [15]. Therefore, reliance on social media for acquiring information related to the COVID-19 pandemic introduces a higher chance of being overwhelmed by unverified and contradictory messages that promote the vicious cycle of anxiety.

During the COVID-19 pandemic, adults aged 60 or older in Hong Kong have a significantly higher risk of exhibiting anxiety symptoms compared to the general population [16]. Challenges are presented to older adults, who may respond to the pandemic and social media differently. Contrary to the primarily unidirectional communication process in traditional media, interactive social media allow users to engage in different modes of health communication [17]. A systematic review showed that previous research seldom distinguished different purposes of social media use among older adults [18]. Active usage such as sharing or posting personal content is different in nature from passive usage such as browsing or seeking information that requires less effort and no need to communicate a self-concept with others in the virtual world [9]. While digital technologies designed for older adults typically stimulate passive usage [2], digital-savvy older adults are developing distinct ways of adopting Internet usage, substituting online sources for traditional media for news and information consumption [19]. Passive usage is common among older adults in Hong Kong, of whom 68% use the Internet for reading news and 71% listen to or watch multimedia content [20]. While their single-way consumption of information and the social media environment suggest a higher risk of having anxiety symptoms [9,10], more evidence is needed to understand whether social media usage has a negative impact on older adults during the pandemic.

Worries over physical health are a major source of anxiety-related concern among older adults, where the cognitive phenomenon of worrying is central to their experience [21]. The higher the health risk, the more likely older adults feel anxious. These health-related concerns could be intensified by COVID-19-related media consumption portraying the virus as particularly harmful to the older population. Inconsistent and overwhelming information available on social media exacerbates worries about the pandemic. Therefore, exposure to COVID-19-related information on social media during the pandemic may induce anxiety symptoms. It is hypothesized that older adults who use social media for COVID-19-related information will exhibit more anxiety symptoms.

Anxiety may contribute to pandemic-related attitudes and behaviours. One of the impacts of

anxiety is its association with social distrust [22]. Recent research in the context of COVID-19 demonstrates that using social media as an information source is associated with conspiracy beliefs [23]. Anxious about contradictory information online, older adults using social media may show more disbelief of others. It is hypothesized that older adults for whom social media is their main source of COVID-19-related information have lower social trust in information, mediated by anxiety symptoms.

While information on social media mediates personal mitigation strategies, anxiety may prompt COVID-safe behaviours including hand washing and social distancing [24]. Meanwhile, excessive anxiety may lead to maladaptive COVID-safe behaviours, such as panic purchasing, or non-adherence to public health recommendations [25]. Given the immense public health risk, anxious older adults may be encouraged to adopt more COVID-safe behaviours. To prevent contracting COVID-19, staying at home to avoid social contact reflects an easy response. It is hypothesized that older adults who use social media as their source of COVID-19-related information will reduce social contact by reducing time spent in the community, mediated by anxiety symptoms.

Anxiety symptoms, social trust in Figure, and time spent in the community may be influenced by the objective risk of contracting COVID-19. In order to account for the effects of the actual risk from the effects of the perceptions acquired via social media, the hypothesized theoretical framework put the risk of contracting COVID-19 as another independent factor (see Figure 1).

Figure 1. Theoretical model.
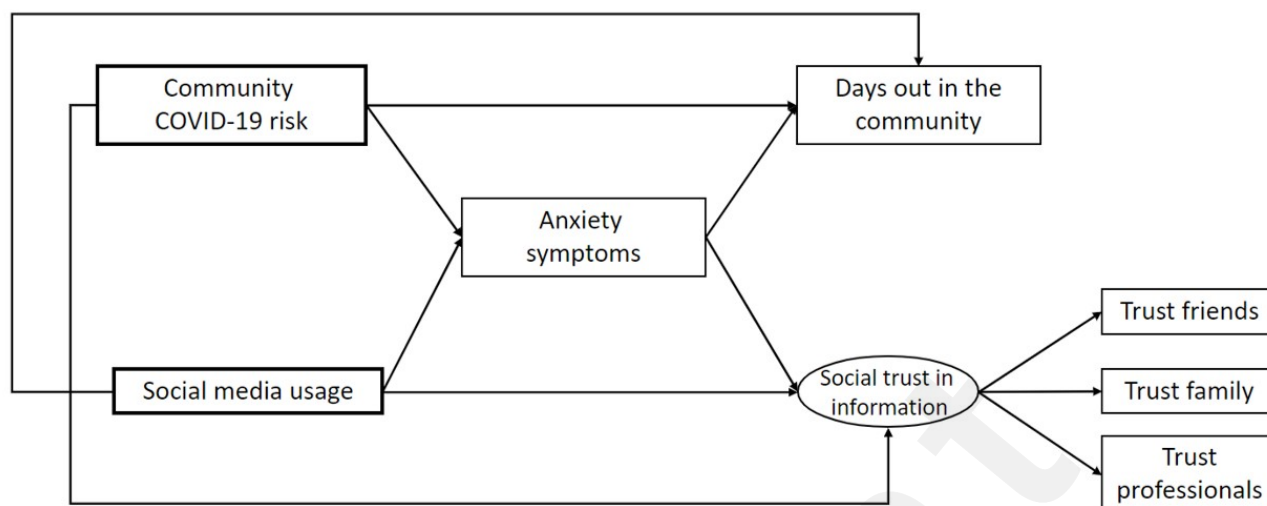
The specific focus of this study was to investigate the effects of consuming public health-related information via social media on anxiety among the older population during a public health crisis. Some of the most recent studies investigating the impact of information source on confidence in coping with COVID-19 [26], behaviours [27] and beliefs about health-related information [28] have primarily used Internet-based questionnaires to survey their participants. Since this study was interested in older people, some of whom may be less engaged in digital communication, an online survey would present difficulties in reaching them and create sampling bias. A telephone survey was therefore chosen to capture a more diverse sample. To address the gap in current literature, the study investigated how social media usage in older adults during the pandemic was associated with anxiety symptoms, and how the two contribute to social trust in information and COVID-safe behaviours.

**Method**

*Study design and sampling*

A cross-sectional telephone survey was conducted during the COVID-19 outbreak in Hong Kong between May and August 2020 of adults aged 60 years and older using services provided by community elderly centres and community mental wellness centres. The former provide active aging

programs and social support for community dwelling older adults. The latter run programs to promote mental wellness in the community and provide psychosocial support for community dwelling residents of all ages with mental health challenges. The research team developed a short survey instrument and trained centre social workers and volunteers to conduct the survey to collect data from 3,421 older adults from 24 centres.

### *Data collection*

Data were collected through telephone interviews. Each interview lasted for about 10 to 15 minutes. The questionnaire was tested and revised before full-scale implementation. Interviewers were trained to make phone calls to respondents using a standardized rapid warm-call protocol. The study was approved by the human research ethics Committee of the university (details to be provided following peer review).

### *Measurements*

The major dependent variables of the study were anxiety, social trust in information, and COVID-safe behaviours. Anxiety was measured by the validated Chinese version of the 2-item anxiety scale (GAD-2), on a scale of 0 to 6 [29]. For social trust in information, respondents were asked the extent to which they believed in COVID-19-related information shared by their families', friends', and professionals' on a scale from 1 (total distrust) to 5 (complete trust). The scale included a 'not applicable' option that resulted in only 1480 respondents completing all three questions. Social trust in information was computed as the average of the three items for OLS regressions (Cronbach's Alpha = 0.69) and as a latent variable of the three items in structural equation modelling (SEM). COVID-safe behaviours were proxied by staying home to avoid social contact, where respondents were asked how many days each week they ventured into the community.

The major independent variable was social media usage for COVID-19-related information, which was measured on a 3-point scale: 0 (no usage), 1 (social media used for COVID-19-related information), and 2 (social media used as the main source of COVID-19-related information). The

variable was recoded from questions on (1) the trust level of media sources and (2) the main source of COVID-19-related information. The trust levels of social media and traditional media were captured in a 5-point scale from 1 (total distrust) to 5 (complete trust). The scale included a 'not applicable' option. Only respondents using social media for COVID-19-related information were prompted to answer the trust level of social media, while non-users picked the 'not applicable' option. Valid responses were therefore recoded as '1' – used social media for COVID-19-related information. The main information source was captured by a dichotomous variable of 'traditional media' or 'social media' where the 'social media' responses were recoded into '2' – social media used as the main source of COVID-19-related information.

The control variables include the risk of contracting COVID-19, depressive symptoms, and demographics. The risk of contracting COVID-19  was measured by the number of confirmed cases in the week of data collection in the district in which the respondent lived. This information was obtained from the government daily report of newly confirmed cases. Depression was measured by the validated Chinese version of the PHQ-2, with a possible range between 0 and 6 [30]. Demographics collected included respondents' age (years), gender (male or female), district of residency and membership of service unit (elderly center or mental wellness center).

### *Statistical analysis*

Descriptive statistics of all variables were computed and reported as appropriate. Multivariate ordinary least squares (OLS) regressions were applied to investigate the effect of social media usage on anxiety symptoms and the effects of social media usage and anxiety symptoms on time spent in the community and social trust in information. The theoretical model was then examined by structural equation modelling (SEM) to test the mediation effect of anxiety symptoms. Social trust in information was treated as a latent construct with the three trust items. The first level of the SEM predicted anxiety symptoms with depressive symptoms, social media usage, and demographics. The second level predicted time in the community and social trust in information with social media

usage, anxiety symptoms, and demographics. The full information maximum likelihood (FIML) approach, which estimates parameters and standard errors directly with all data but not imputing missing data, was employed to account for the missing data in SEM. FIML generates relatively unbiased estimates and least convergence failures compared to other methods, such as listwise or pairwise deletion and multiple imputation in SEM [31]. It is also less affected by nonnormal missing data and data distribution shape [32].

All data were consolidated and analysed with SPSS after removal of personal identifying information. SEM was conducted using the R package *lavaan* [33].

**Results**

Table 1 shows respondents' characteristics. Their average age was 76 years (SD = 8.9 years), 25% were male, and 78% were recruited from eldery centers. The average number of COVID-19 cases in a community was around 26 (SD = 27.5), ranging from 0 to 135. Depression and anxiety were not prevalent, PHQ-2 and GAD-2 scores averaged 0.83 (SD = 1.3) and 0.74 (SD = 1.2) respectively. 1399 respondents (41%) used social media to obtain COVID-19-related information, of whom 203 (6%) used social media as their main source of COVID-19 information. They spent on average four days in the community (SD = 2.4 days) and had moderate to high levels of social trust in information ($M_{family}$ = 4.4, $SD_{family}$ = 0.83; $M_{friends}$ = 3.6, $SD_{friends}$ = .96; $M_{professionals}$ = 4.5, $SD_{professionals}$ = .74).

Compared to respondents recruited from mental wellness centers, respondents from elderly centers showed a different profile in their demographics and mental health status, but not their usage in social media. Respondents from elderly centers were on average 4.4 years older (t = 12.0, *P* < .001) and more were male (26% in elderly centers versus 22% in mental wellness centers, $\chi^2$ = 6.0, *P* = .014). They also showed fewer depressive symptoms from PHQ-2 ($M_{EC}$ = .69, $SD_{EC}$ = 1.18; $M_{MWC}$ = 1.33, $SD_{MWC}$ = 1.53; t = 12.3, *P* < .001) and fewer anxiety symptoms from GAD-2 ($M_{EC}$ = .61, $SD_{EC}$ = 1.13; $M_{MWC}$ = 1.22, $SD_{MWC}$ = 1.43; t = 12.1, *P* < .001). Nevertheless, since there was no

significant difference in their usage of social media (t = 1.35, *P* = .179), which was the main

independent variable, the nature of the service was treated as a control variable in the subsequent

analysis.

Table 1. Respondents' Characteristics.

| Variables | No. of respondents | Statistics |
|---|---|---|
| Demographics | | |
|   Age (years), mean (SD) | 3421 | 76.0 (8.9) |
|   Gender (Male), n (%) | 3418 | 869 (25.4) |
|   Service nature (aged care), n (%) | 3421 | 2666 (77.9) |
| Community COVID-19 risk | | |
|   Weekly number of COVID-19 cases in district, mean (SD) | 3421 | 25.7 (27.5) |
| Psychological well-being, mean (SD) | | |
|   PHQ-2 (range = 0-6) | 3418 | .83 (1.3) |
|   GAD-2 (range = 0-6) | 3388 | .74 (1.2) |
| Trust in traditional media, mean (SD) | 3335 | 4.27 (.88) |
| Trust in social media, mean (SD) | 1399 | 3.18 (1.1) |
| Social media usage | | |
|   Used social media for COVID-19 information, n (%) | 3421 | 1196 (35.0) |
|   Social media as the main source of COVID-19 information, n (%) | 3421 | 203 (5.9) |
| Days out in the community per week, mean (SD) | 3161 | 4.1 (2.4) |
| Social trust in COVID-19 information | | |
|   Family, mean (SD) | 2620 | 4.4 (.83) |
|   Friends, mean (SD) | 2023 | 3.6 (.96) |
|   Professionals, mean (SD) | 2150 | 4.5 (.74) |

Table 2 shows the results of the OLS regressions. After controlling for demographics and

depressive symptoms, social media usage for COVID-19-related information was associated with

anxiety symptoms (B = .05, *P* = .041). Using more social media for COVID-19-related information

was associated with more anxiety symptoms. Although social media use did not predict time spent in

the community, it was associated with lower social trust in information (B = -.13, *P* < .001). Anxiety

symptoms were also negatively associated with time spent in the community and social trust in

information ($B_{days\ out}$ = -.08, *P* = .021; $B_{social\ trust}$ = -.04, *P* = .019). Community COVID-19 risk was not

significantly associated with anxiety symptoms (B = .001, *P* = .68) but predicted less time spent in

the community (B = -.01, *P* < .001) and higher social trust in information (B = .003, *P* < .001). Aged care respondents showed fewer anxiety symptoms (B = -.18, *P* < .001) and higher social trust in information (B = .23, *P* < .001) while older respondents spent least time in the community (B = .03, *P* < .001).

Table 2. Results from OLS regressions predicting anxiety symptoms, Days out in the community, and social trust in information. Presented in unstandardized coefficients (B), 95% confidence intervals (CIs), and *P* values.

| | GAD-2 (N=3384) | | Days out in the community (N=3126) | | Social trust in information (N=1480) | |
|---|---|---|---|---|---|---|
| | B (95% CI) | *P* value | B (95% CI) | *P* value | B (95% CI) | *P* value |
| Gender | -.09 (-.15, -.03) | .005 | .24 (.04, .43) | .016 | -.10 (-.18, -.02) | .017 |
| Age | -.002 (-.00, .00) | .314 | -.03 (-.04, -.02) | <.001 | -.001 (-.01, .00) | .709 |
| Community COVID-19 risk | .001 (-.00, .00) | .068 | -.01 (-.01, -.00) | <.001 | .003 (.00, .00) | <.001 |
| Service nature = aged care | -.18 (-.25, -.10) | <.001 | .05 (-.17, .26) | .672 | .23 (.14, .32) | <.001 |
| Depressive symptoms | .71 (.69, .73) | <.001 | - | - | - | - |
| Social media usage | .05 (.00, .10) | .041 | .01 (-.14, .16) | .892 | -.13 (-.20, -.07) | <.001 |
| Anxiety symptoms | - | - | -.08 (-.15, -.01) | .021 | -.04 (-.07, -.01) | .019 |

The results of SEM analysis (Table 3 and Figure 2), modeling the mediation effect of anxiety symptoms, showed a good fit (CFI = .994, TLI = .987, RMSEA = .020) and coincided with most findings in the OLS regressions. Using social media for COVID-19-related information predicted more anxiety symptoms (Coef. = .025, *P* = .041). Anxiety, meanwhile, was associated with lower social trust in information (Coef. = -.089, *P* < .001) and less time spent in the community (Coef. =

-.043, $P$ = .017). While social media usage was directly associated with lower social trust in information (Coef. = -.205, $P$ <.001), anxiety mediated its effect (total effect = -.208, $P$ < .001). However, social media usage was not associated with time spent in the community (Coef. = .003, $P$ = .893). No mediation effect was detected either (total effect = .001, $P$ = .938). Sensitivity checking using social trust in information and time spent in the community to predict anxiety symptoms in SEM showed no significant associations (CFI = .990, TLI = .978, RMSEA = .026), suggesting that anxiety was a valid independent factor in the second level of the original SEM model.

Figure 2. SEM model.
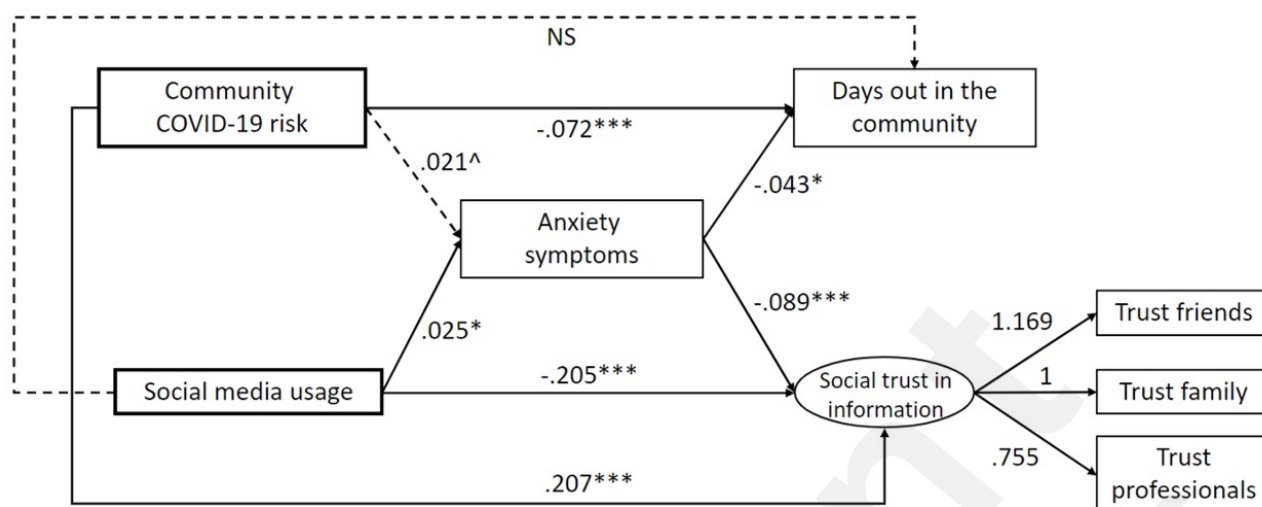


\*\*\* *P* < .001, \*\* *P* < .01, \* *P* < .05, ^ *P* = .069

Table 3. Standardized parameter estimates and their standard errors of the SEM model (N=3415), treated with full information maximum likelihood (FIML) estimation.

| | Standardized parameter estimate | Standard error | *P*-value |
|---|---|---|---|
| **Measurement Model** | | | |
| Social trust in information =~ | | | |
| trust in family | 1 | | |
| Social trust in information =~ | | | |
| trust in friends | 1.169 | .063 | .000 |
| Social trust in information =~ | | | |
| trust in professionals | .755 | .040 | .000 |
| **Regression** | | | |
| Anxiety symptoms ~ | | | |
| Age | -.013 | .002 | .313 |
| Gender = M | -.032 | .032 | .005 |
| Service nature = aged care | -.059 | .036 | .000 |
| Community COVID-19 risk | .021 | .001 | .069 |
| Depressive symptoms | .708 | .011 | .000 |
| Social media usage | .025 | .025 | .041 |
| Social trust in information ~ | | | |
| Age | .029 | .002 | .241 |
| Gender = M | -.061 | .029 | .007 |
| Service nature = aged care | .158 | .032 | .000 |

| | | | |
|---|---|---|---|
| Community COVID-19 risk | .207 | .000 | .000 |
| Social media usage | -.205 | .023 | .000 |
| Anxiety symptoms | -.089 | .011 | .000 |
| Days out in the community ~ | | | |
| Age | -.100 | .005 | .000 |
| Gender = M | .042 | .097 | .019 |
| Service nature = aged care | .007 | .108 | .694 |
| Community COVID-19 risk | -.072 | .002 | .000 |
| Social media usage | .003 | .075 | .893 |
| Anxiety symptoms | -.043 | .035 | .017 |

| Goodness-of-fit | | | | |
|---|---|---|---|---|
| χ2 (df=19) | | 44.4 | *P*-value | .001 |
| Comparative Fit Index (CFI) | | .994 | RMSEA | .020 |
| Tucker-Lewis Index (TLI) | | .987 | SRMR | .014 |

**Discussion**

Our findings are not only consistent with previous studies on the association between social media use and anxiety [8,9], especially during the COVID-19 pandemic [11–13], but also identified the major type of social media use among older adults, consuming information, as predicting more anxiety symptoms. Both the OLS regression and SEM results demonstrated the association between using social media for COVID-19-related information and more anxiety symptoms among older adults. On the one hand, the ecology of social media, characterized by information overload and sensationalization of information [34,35], could have amplified older users' nervousness and perceptions of the risks of contracting COVID-19. The inconsistency in unverified information on social media exacerbated this anxiety. On the other hand, older people's passive usage of social media suggested an intensified anxiety [9,10]. Since mental wellbeing decreases when social media users fail to acquire direct social interaction to satisfy their relatedness needs [36,37], passive usage may intensify unmet needs resulting from social isolation during the pandemic, thus prompting anxiety symptoms.

The SEM results suggest that anxiety symptoms mediated the effect of social media usage on social trust in information. The proliferation of unverified and emotional information may drive anxiety and lower social trust in information among social media users. Algorithms in social media

platforms prioritise sensational information [35]. User attention is drawn to the emotions induced whilst diminishing the ability to critically evaluate the accuracy of information, promoting the impulsive spread of unverified (mis)information [38]. As a result, social media users may face contradictory information on social media, which may also be inconsistent with the information acquired from family, friends, or even health professionals. Not only would they become anxious about what to believe, social trust in information was also undermined by reading conflicting claims. Another problem brought by social media use is the overwhelming amount of information overloading users as a result of uncontrolled news consumption [34]. On popular social media platforms, such as Facebook and Twitter, an infinite scroll feeds content to users without a "stopping cue" [39], while algorithms tailor content that suits user preference [35]. The environment in social media suggests users are encouraged to stay on their sites as long as possible, consuming more information than intended. Overload is further magnified by the challenge to process the unverified, anonymous, and overwhelmingly subjective news on social media [40]. Consequently, it is difficult to digest all the information flooding into the social media feed because of both its enormous quantity and questionable quality.

Our results reflect that the infodemic may have caused more confusion than promoting COVID-safe behaviours. While older adults' social media usage demonstrated no association, the number of COVID-19 cases in the community and anxiety symptoms predicted less time spent in the community, suggesting that older adults adopted COVID-safe behaviours when the risk is high and when they became anxious. COVID-safe behaviours may be further encouraged by the surge of social distancing and stay-home advice when the number of confirmed cases grew. However, these messages might not be transmitted equally to all social media users. Health-related misinformation proliferated well before the pandemic, facilitated by "information silos" and "echo chambers" in social media [41]. The clustering of users in social media means that both useful information and harmful misinformation may not reach a mass audience but is amplified within social bubbles.

Different stories could be proliferating among different user subgroups, resulting in the uneven effects of consuming information in social media on COVID-safe behaviours.

A greater understanding of how anxiety affects behaviours and attitudes could inform ways to communicate COVID-19-related information to older adults to promote appropriate COVID-safe behaviours and social trust in information and contribute to the wider public health effort. On the one hand, our results suggest anxiety encourages older adults to avoid social contact. Nevertheless, more research is warranted to understand if this is rational risk aversion or panic-induced maladaptive behaviour. On the other hand, while it is normal to be anxious in the face of a global pandemic, future research should also focus on the management and mitigation of anxiety during a prolonged pandemic so that older adults' trust in the people around them, who may provide the most adequate and timely support, is less likely to be undermined.

Although this study suggests some adverse effects of using social media, it does not mean that older adults should avoid using it. On the contrary, it is necessary to address these problems and identify the potential benefit of using social media to promote adequate COVID-safe behaviour, and reduce loneliness amid social distancing. Digital skills alone may no longer be sufficient to enable older adults navigate the complex contemporary media environment. Media literacy among older adults should be advocated to enable them to critically analyse and interpret information. Guidance should be provided to promote healthy coping behaviours such as verifying suspicious information and searching for credible information sources in response to the 'infodemic' in social media. Advice on responsible social media use is essential for building a constructive social media environment for older adults. Media literate older adults should understand the consequences of spreading misinformation and refrain from sharing unverified information. By empowering older adults to distinguish and reject misinformation, the infodemic may be alleviated if the transmission of misinformation is curbed in its early stages. Anxiety may be reduced when older adults acquire agency while mutually building a healthy social media environment.

**Limitations**

Since the rapid warm-call protocol was designed to conduct interviews quickly with an extensive reach, our questions were designed to be simple and concise. Although a social media usage scale was constructed for this study, the frequency of media use is still to be addressed. The frequency or time spent on social media may provide greater information about the influence of media usage patterns on anxiety, attitudes and behaviours. Our scale did not capture the variance in time exposed to social media, only its ratio. Therefore, the study may underestimate the effect of social media usage. Meanwhile, only one COVID-safe behaviour, staying home to avoid social contact, was measured. Potential bias may occur when other factors contribute to older adults staying at home, such as the closure of businesses and social services, that were unrelated to social media usage and anxiety.

The study may have underestimated the effect of social media usage among older adults in Hong Kong by recruiting only people who used services provided by elderly centers or mental wellness centers, thus excluding older adults who did not use these services. Without support from social service units, these older adults could have experienced a greater challenge in navigating the pandemic. They might exhibit greater anxiety from not receiving adequate social support, and social media might be a more significant source of information about the COVID-19 pandemic.

**Conclusion**

This study suggests that social media usage by older adults in Hong Kong duirng the COVID-19 pandemic was associated with anxiety symptoms. Meanwhile, anxiety symptoms mediated the effect from social media usage to social trust in information but not COVID-safe behaviours. This suggests that the infodemic may have caused confusion when older adults digest health information, prompting anxiety among them about what and who to believe and thus reducing social trust in information. The fragmentized social media landscape further promoted an uneven impact of infodemic between different groups of users. It could explain why objective risk and anxiety

predicted older adults' avoidance of leaving home but social media usage did not. To encourage the

healthy use of social media, media literacy education should be promoted among older adults.

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**Conflicts of Interest**

None declared.

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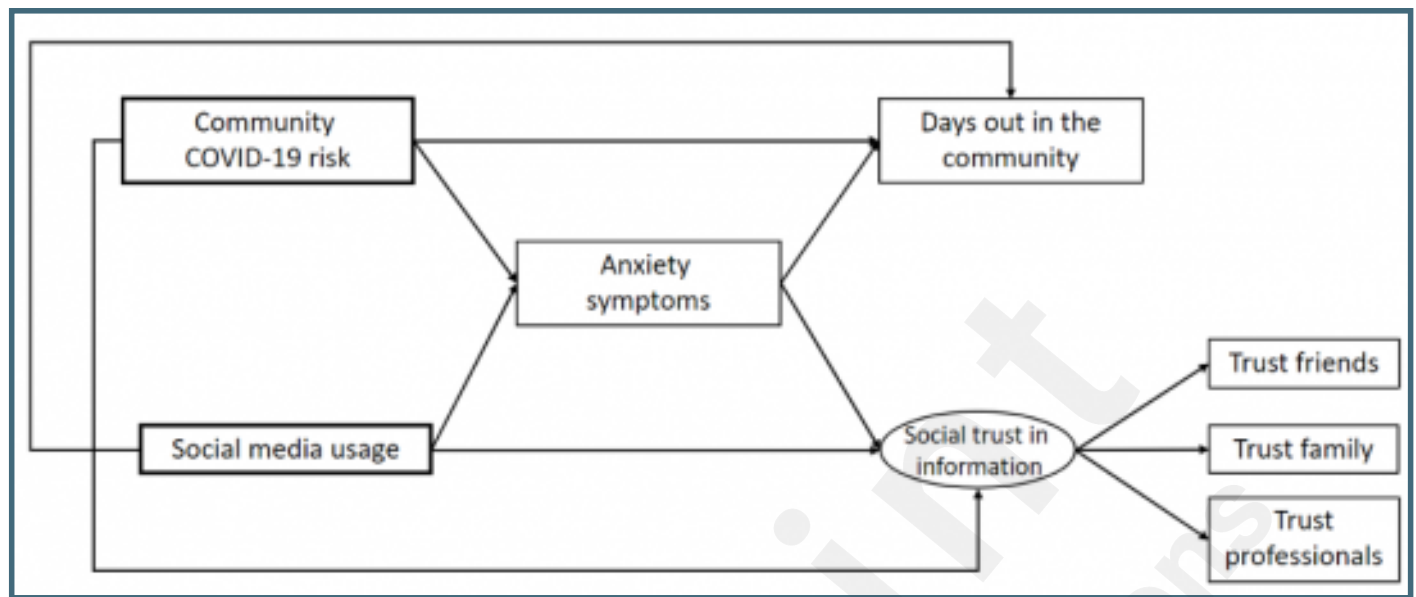25.     Asmundson GJG, Taylor S. How Health Anxiety Influences Responses to Viral Outbreaks

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**Supplementary Files**

# Figures

Theoretical model.

SEM model.