proceedings

MDPI

Proceedings

Concerns over the Spread of Misinformation and Fake News on Social Media – challenges Amid the Coronavirus Pandemic

Janni Leung [1,*], Mariyana Schoultz [2], Vivian Chiu [1], Tore Bonsaksen [7], Mary Ruffolo [5], Hilde Thygesen [3,4], Daicia Price [5] and Amy Østertun Geirdal [6]

1. The University of Queensland, Faculty of Health and Behavioural Sciences, Brisbane, Australia; j.leung1@uq.edu.au; vivian.chiu@uq.net.au
2. University of Salford, School of Health and Society, Manchester, United Kingdom; M.Schoultz@salford.ac.uk
3. Oslo Metropolitan University, Faculty of Health Sciences, Department of Occupational Therapy, Prosthetics and Orthotics, Oslo, Norway; hilde.thygesen@oslomet.no
4. VID Specialized University, Faculty of Health Studies, Sandnes, Norway.
5. University of Michigan, School of Social Work, Ann Arbor, Michigan, USA; mruffolo@umich.edu; daicars@umich.edu
6. Oslo Metropolitan University, Faculty of Social Sciences, Department of Social Work, Oslo, Norway; amyoge@oslomet.no
7. Inland Norway University of Applied Sciences, Department of Health and Nursing Sciences, Norway; tore.bonsaksen@inn.no

* Correspondence: Janni Leung; The University of Queensland, NCYSUR, 17 Upland Road, St Lucia, QLD 4067, Australia E: j.leung1@uq.edu.au

Abstract: The unfolding pandemic of COVID-19, also known as coronavirus, has caused challenges across the globe. Shelter-in-place, lock-down, and social distancing policies increased the use of social media for societies to stay connected. This study investigated psychological issues societies experienced from using social media among community during this critical period. Cross-sectional online surveys were used to collect qualitative data from 1991 respondents living in the UK, USA and Australia during April-May 2020 when shelter-in-place or stay-at-home policies were in place. The study found that the spread of misinformation and conspiracy theories have caused psychosocial challenges and disconnections in the community.

Keywords: misinformation; social media; mental health; Coronavirus; pandemic

1. Introduction

The unfolding pandemic of COVID-19, also known as coronavirus, has caused challenges across the globe. Uncertainties of the situation and changes in the way we live with lock-down, shelter in place and social distance policies have generated stress and anxiety in people with psychological conditions as well as healthy individuals [1].

The World Health Organization had called for people to stay connected in contactless manners, such as by social media [2]. Trust in government and the sense of unity when facing a shared threat may enhance mental resilience to facilitate coping with the crisis [3]. However, despite providing an alternative form of human connection and communication when physically meeting is not possible, social media use has been associated with depression, anxiety and psychological distress [4].

To gain insight into the critical psychological issues that societies may be facing during the times of increased internet use, the present study investigated qualitative data regarding personal experience in using social media across the USA, UK, and Australia.

2. Methods

Setting and participants

Data were from a multi-country cross-sectional online survey was conducted during April-May 2020, across Norway, USA, UK and Australia. The data were collected when stay-at-home policies were in place over 3-4 weeks period in each country.

Participants were invited to complete an online self-administered survey distributed via social media advertisements (Facebook, Instagram and Twitter) and university networks across Norway, USA, UK and Australia. The data landing sites were: OsloMet - Oslo Metropolitan University, Norway; University of Michigan, USA; University of Salford, UK; and the University of Queensland, Australia. The initiator of the project was AØG from OsloMet. All countries and universities had a country-specific lead for the project, with ethical considerations and approvals. The project was approved by Oslo Metropolitan University and by the Regional committee for medical and health research ethics (REK; project reference 132066) in Norway. Reviews and exemptions were obtained from the University of Michigan Institutional Review Board for Health Sciences and Behavioral Sciences (IRB HSBS) in USA (HUM00180296), the University Health Research Ethics in UK (HSR1920-080), and the University of Queensland Human Research Ethics Office in Australia (HSR1920-080).

Inclusion

The project's inclusion criteria was for participants to be 18 years or older, understanding Norwegian or English and living in Norway, USA, UK or Australia. We had initial responses from 3810 participants from Norway (n=771), USA (n=1393), UK (n=1373), and Australia (n=273). For the present analysis, participants from Norway were excluded because the qualitative item required for this paper was not asked. From USA, UK, and Australia, 1012 participants who did not answer the item or answered "none", and 36 who provided an answer but not in response to the question (e.g. survey feedback) were excluded. Finally, responses from 1991 participants were included in the present article for qualitative analysis.

Measures

Participants were asked an open-ended question "During this COVID-19 pandemic, what challenges have you experienced in using social media?". The measure of interest for this study are comments related to concerns over misinformation, including expression and responses related to misinformation, conspiracy theories, fake news, and conflicting or non-scientific claims and information.

Analysis

The collected responses were reviewed by two researchers independently. Responses were screened and sorted into three categories: a) relevant to concerns over misinformation; b) irrelevant to misinformation; and c) invalid response (i.e., responses unrelated to the question asked or no response provided). All valid responses were then independently coded by a second reviewer. Conflicted categories were discussed and resolved. The proportion of responses regarding concerns over misinformation were calculated for each country. Chi-square tests were used to assess the significance of differences between countries. Responses relevant to concerns over misinformation were qualitatively examined based on their content.

3. Results

We observed that concerns over misinformation and fake news were repetitively raised as a key challenge during the COVID-19 pandemic (see Figure 2). Overall, 1 in 3 respondent expressed concerns over misinformation as the key challenge, with higher

prevalence among respondents from the USA (41%) than UK (35%) and Australia (32%), $\chi^2(2)=8.5$, $p=0.015$.

Many respondents expressed concerns and psychological distress over the amount of misinformation on social media. Respondents who mainly accessed information through sources that they considered trustworthy, such as only trusting information from official health channels, were less likely to express emotional distress. However, some who believe that they were not affected by misinformation themselves were worried about others in the community believing in false information being spread over social media. Most participants commented that the vast amount of misinformation on social media was a stressor because they created confusion and difficulties for them to access accurate information. Example quotes included:

There is a lot of fake news on social media and sometimes it is difficult to distinguish real news from fake news.

Sorting through misinformation and feeling stressed about spreading of false information…

There were responses from both-side of the community - those who believed that the pandemic was not taken seriously enough, and those who believed the opposite. Both-side of people who trusted the health officials, and people who did not trusted the health officials, expressed negativity towards what they believed was the false information. For example:

Feelings of frustration with misinformation from government officials, and people overblown the "pandemic".

… It is difficult to watch people post about not taking the pandemic seriously and complaining about minor things when people are dying and putting their own lives on the line...

Challenges in dealing with conflicting information and conspiracy theories were also commonly raised, as illustrated in the following example quotes:

Too much conflicting information, conspiracy theories and inappropriate trolling causing conflict between people.

Information on social media can be incorrect. People share conflicting articles. It can sometimes make you feel more isolated and apart from all your friends only seeing brief updates

While social media was designed to facilitate social connections, it could conversely cause disconnection when false information spread by others, including friends or family, causes conflicts, distancing, frustration, or arguments, for example:

Remaining neutral and not comment on posts that I think are outlandish. I don't need to add to the mis-information but when I don't agree at all, it's hard not to react. My eyes have been opened to a side of a few people, that I was surprised existed. I have unfriended a few people and hidden many too.

I've culled or modified my Facebook friends list a bit. People can think whatever they want, but I'm not interested in their promotion of conspiracy theories or arguing with me about how safe my work place is or isn't.

4. Discussion

Communication of accurate information to the public is particularly important during a crisis from an informational perspective [5]. From a psychological perspective, we

found that the spread of misinformation is a critical societal issue during COVID-19. Our findings support that public health responses to pandemics need to integrate psychological strategies to address the mental health consequences [6]. Increased exposure to social media can negatively affect the mental health of the society [7]. Excessive exposure to media coverage of the coronavirus pandemic may heighten the sense of risk and induce acute stress responses, as seen in previous public health crisis [8].

In the present study, many social media users expressed frustration about conflicting information (including information from government bodies, news outlets, information articles and individual opinions) and misinformation surrounding the current COVID-19 outbreak. Conflicting information have caused additional stress and anxiety, and the rapid spread of misleading information and conspiracy theories related to COVID-19 is inducing social media panic [9]. Currently, authorities and government bodies are focused on concerns that incorrect health advice circulated on social media would harm the community directly (e.g. recommendation of drinking salt-water or bleach as a cure for the coronavirus disease).

Our results suggest that accessing information through social media during crisis may increase anxiety. Social media users can personalize the information they share (e.g. adding personal opinions and speculations), and misleading information and conspiracy theories tend to be more popular than posts dispersing accurate health information [10]. Unable to distinguish facts from misinformation fuels psychological distress. Some social network platforms such as Twitter have started labelling disputed information on their platforms since March 2020. Further investigation is needed to assess the effectiveness of such measures on the information presented on social media and how that may affect the mental well-being of social media users.

Although some people managed to stay informed using social media, others said that differing opinions (referred as fake news by respondents) from friends and families have put strains on relationships and made them feel more isolated. Insufficient social support and prolonged acute stress during the COVID-19 outbreak may cause adverse long-term mental health outcomes. Social isolation would also make it harder for people to return to regular personal contact when the shelter-in-place or lock-down periods are over. The American Psychological Associations have posted five tips for the public to manage their anxiety given the crisis, including a call for people to verify information obtained from social media and to keep connected and share useful information with friends and family. [11]. Our findings indicated that in some instances, the sharing of information between friends and family had led to interpersonal conflicts when people disagreed upon the truth. Shared family beliefs foster relationships and provide positive psychology in times of stress and uncertainties [12]. However, access to different sources of information from social media may have increased divergence of opinions between family members. It is evident that in addition to providing tips to the society in strategies to obtain accurate information, we urgently need psychosocial and interpersonal strategies of how to maintain a supportive relationship with family and friends who may have a different opinion. A crisis specific module to address psychosocial issues arising from the spread of misinformation on social media is warranted for incorporation into the continued efforts of health service psychology education and training [13]. Mental health professionals need to consider how to support people in the community who may benefit from help to rebuild and strengthen interpersonal relationships in response to the potential increased psychosocial challenges during and after the crisis.

The following are the key limitations of our observations. Our data is cross-sectional, and we do not know if respondents had been facing challenges with misinformation before the COVID-19 pandemic for comparison. A third of the participants had not answered the open-ended qualitative item to enable analysis. It was unclear whether they did not respond due to not having faced any challenges, did not wanted to answer an open-ended item (last item as part of a larger survey). Prevalence of participants expressing concerns over misinformation on social media may differ if we had collected

information on this as a yes/no item. Future research is warranted to collect quantitative data and further explore psychosocial interventions that could buffer the impacts of misinformation.

5. Conclusions

We observed that the spread of misinformation, conspiracy theories, and fake news on social media during the COVID-19 pandemic was a critical societal issue faced by the public across the USA, UK, and Australia. The spread of misinformation caused psychosocial challenges and disconnections in the society. The vast amount of misinformation creates confusion and leads to distress and frustration. As part of our public health response in countering misinformation, we need to invest in strategies to address psychosocial consequences. There is an urgent need to address the spread of misinformation from a psychological perspective during the current and future crisis.

Author Contributions: AØG initiated the Impact of Covid-19 social distancing on Mental Health and Quality of Life cross-national comparative project. JL initiated and drafted this article; TB & AØG provided advice on the direction of the article. JL, MS, & VC coded the data for this article. All authors contributed to the concept, interpretation of evidence, drafting, and revising the article.

Funding: This research received no external funding.

Acknowledgments: We are sincerely grateful for all the respondents for their contribution to this study.

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

References

[1] J. Shigemura, R. J. Ursano, J. C. Morganstein, M. Kurosawa, and D. M. Benedek, "Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: Mental health consequences and target populations," *Psychiatry and Clinical Neurosciences,* vol. 74, no. 4, pp. 281-282, 2020, doi: 10.1111/pcn.12988.

[2] World Health Organization, "Mental health and psychosocial considerations during the COVID-19 outbreak, 18 March 2020," World Health Organization, Geneva, 2020 2020, issue CC BY-NC-SA 3.0 IGO. [Online]. Available: https://apps.who.int/iris/handle/10665/331490

[3] C. G. Sibley *et al.*, "Effects of the COVID-19 Pandemic and Nationwide Lockdown on Trust, Attitudes Toward Government, and Well-Being," *American Psychologist,* 2020, doi: 10.1037/amp0000662.

[4] B. Keles, N. McCrae, and A. Grealish, "A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents," *International Journal of Adolescence and Youth,* vol. 25, no. 1, pp. 79-93, 2020, doi: 10.1080/02673843.2019.1590851.

[5] J. J. V. Bavel *et al.*, "Using social and behavioural science to support COVID-19 pandemic response," *Nature Human Behaviour,* vol. 4, no. 5, p. 460, 2020, doi: 10.1038/s41562-020-0884-z.

[6] N. J. Kaslow *et al.*, "Flattening the emotional distress curve: A behavioral health pandemic response strategy for COVID-19," (in eng), *Am Psychol,* 2020/06// 2020, doi: 10.1037/amp0000694.

[7] B. A. Primack *et al.*, "Use of multiple social media platforms and symptoms of depression and anxiety: A nationally-representative study among U.S. young adults," *Computers in Human Behavior,* vol. 69, pp. 1-9, 2017, doi: 10.1016/j.chb.2016.11.013.

[8] R. R. Thompson, D. R. Garfin, E. A. Holman, and R. C. Silver, "Distress, Worry, and Functioning Following a Global Health Crisis: A National Study of Americans' Responses to Ebola," *Clinical Psychological Science,* vol. 5, no. 3, pp. 513-521, 2017, doi: 10.1177/2167702617692030.

[9] A. Depoux, S. Martin, E. Karafillakis, R. Preet, A. Wilder-Smith, and H. Larson, "The pandemic of social media panic travels faster than the COVID-19 outbreak," *Journal of Travel Medicine,* vol. 27, no. 3, 2020, doi: 10.1093/jtm/taaa031.

[10] M. Sharma, K. Yadav, N. Yadav, and K. C. Ferdinand, "Zika virus pandemic—analysis of Facebook as a social media health information platform," *AJIC: American Journal of Infection Control*, vol. 45, no. 3, pp. 301-302, 2017, doi: 10.1016/j.ajic.2016.08.022.

[11] American Psychological Association. "Five Ways to View Coverage of the Coronavirus." https://www.apa.org/helpcenter/pandemics (accessed 20 Jun, 2020).

[12] H. Prime, M. Wade, and D. T. Browne, "Risk and resilience in family well-being during the COVID-19 pandemic," (in eng), *Am Psychol*, 2020/05// 2020, doi: 10.1037/amp0000660.

[13] D. Bell, M. Self, C. Davis, F. Conway, J. Washburn, and F. Crepeau-Hobson, "Health service psychology education and training in the time of COVID-19: Challenges and opportunities," *American Psychologist*, 06/25 2020, doi: 10.1037/amp0000673.