

Gender, Social media Use, and Fear of COVID-19 among Ghanaian University Students

Esther K. Malm

Murray State University

Mabel Oti-Boadi (✉ moti-boadi@ug.edu.gh)

University of Ghana

Nutifafa Eugene Yaw Dey

University of Ghana

Abigail Esinam Adade

University of Ghana

Godwin Ocansey

University of Ghana

Research Article

Keywords: Gender, social media use, fear of COVID-19, university students, Ghana

Posted Date: April 25th, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1519483/v1>

License:  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background

COVID-19 and its associated social restrictive measures and lockdowns exacerbated the use of social media and other technological facilities for communication. This study, therefore, examined Ghanaian students' social media use and its relationship with fear of COVID-19, paying close attention to the moderating role of gender.

Methods

Data were collected between June and July 2020 among a sample of 209 students via online measures on social media use and fear of COVID-19.

Results

Findings revealed that social media use had a small and positive association with fear of COVID-19 ($r = 0.18$, $p = 0.009$). The mean scores of these variables did not differ by gender. However, moderation analysis revealed that increased social media use raised the fears of COVID-19 of female students ($B = -0.24$, $p = 0.034$).

Conclusion

Although social media was used for connecting with people and accessing pandemic-related information, our findings clearly suggest that overuse or over-engagement may just be problematic, especially for females. Aside from developing interventions to reduce students' fears of COVID-19, appropriate usage of social media should be advocated.

Introduction

The novel coronavirus (SARS-CoV-2), popularly known as COVID-19, is a highly infectious virus discovered in China, Wuhan in the later part of 2019. It was highly transmissible across the globe and officially declared a pandemic by the World Health Organization on March, 11, 2020 (World Health Organization [WHO], 2020). Research indicates that COVID-19 spreads rapidly through physical and social contact with others who may have contracted the disease (WHO, 2021). Around the world, COVID-19 has been found to have an enormous negative impact on various well-being indicators including mental health (e.g., Asmundson & Taylor, 2020; Bonsaksen et al., 2021; Hammad & Algarni, 2021; Neil et al., 2021; Oti-Boadi et al., 2021; Rogowska et al., 2020; Stroud & Gutman, 2021; Yip & Chau, 2020). For instance, fear associated with COVID-19 propels people to be anxious in protecting themselves and their loved ones, which can lead to social isolation, fear, and panic (Yip & Chau, 2020). A recent study by Oti-

Boadi et al. (2021) found that Ghanaian students experienced normal to mild levels of psychological distress but reported above average scores on fear of coronavirus. In addition, a longitudinal study among youth in the United Kingdom showed an increase in mental health challenges (including increased use of maladaptive coping strategies and decreased physical activity) during the COVID-19 outbreak, especially among females and those with preexisting condition, among other findings (Stroud & Gutman, 2021).

Social media use during the pandemic

Almost all countries around the globe introduced social restrictive measures including quarantine and social distancing to stall the spread of the disease (Lin et al., 2020). These measures, largely affected economic, social, and physical activities and further had a negative toll on the social, emotional and physical well-being of people all over the world (Henssler et al, 2021; Yip & Chau, 2020). The restrictive measures prevented residents from going outside of their homes and engaging in interpersonal activities and communication (Yip & Chau, 2020). A significant number of the world's population, including students were limited to activities they could do socially, thus limited to what they could do in their homes (Romero-Blanco et al., 2020). Just as mainstream media and alternative media (e.g., social media) contribute significantly to information flow about all issues and crises, the media was key in keeping people informed about the pandemic right from the outbreak. The media consistently provided information on the virus, its spread, measures of government, recommendations of the public health agencies, or the economic and consequences of the various activities around the globe (Anwar et al., 2020; Li et al., 2021). Social media platforms (i.e., WhatsApp, Facebook, Twitter, Instagram), in particular, proved vital to sharing information on the virus and its transmission, people's experiences, and all other issues related to the COVID-19 pandemic (Wheaton et al., 2021; Li et al., 2021). Similarly in Ghana, the 83.9% and 71% people described as active WhatsApp and Facebook users as of the third quarter of 2020, respectively, certainly relied on these platforms for their information about the virus (Sasu, 2020; Tabong & Segtub, 2021).

Health impact of social media use

Research has established a relationship between active or high social media use and psychological well-being, as it has been found to reduce loneliness, increase life satisfaction and provide a sense of belonging to users (McLaughlin & Sillence, 2018; Pennington, 2021; Radwan et al., 2020; Zhan et al., 2016). On the other hand, social media could also be disastrous to the lives of people in the sense that excessive use has been linked to grave mental health issues such as depression, anxiety and poor sleep (Alonzo et al., 2020; Islam et al., 2020; Majeed et al., 2020; Rasmussen et al., 2020). According to Gao et al. (2020), the panic being spread about COVID-19 through sensational stories and misinformation by social media and other digital platforms potentially increased stress and anxiety in people. Generally, studies are showing that information received from social media were likely to cause distress in a significant proportion of the global population (Islam et al., 2020; Majeed et al., 2020; Wheaton et al.,

2021; Gao et al., 2020). Students form a greater part of the population that rely on social media for information, and this was greatly increased during the peak of the pandemic (Boursier et al., 2020).

Online-learning and students' social media use

The COVID-19 pandemic also gravely affected the education sector globally where students had to stay at home due to closures of various educational institutions. Students mostly relied on online classes to continue their academic work and served as a basic means of maintaining the social connection between students and their colleagues (Petzold et al., 2020). Globally, the introduction of online learning and teaching stimulated the use of internet in virtually all aspects of students' lives including surfing social media platforms for information on the pandemic (Camargo et al., 2020). Studies are showing that students online learning and adhering to stay home measures got them stressed out due to the uncertain nature of their studies and exams (Durante et al., 2021; Gao et al., 2020). This panicky situation strengthened their reliance on social media for communication including their learning and instructional activities (Lin et al., 2020) and to also deal with the stress and anxiety associated with the quarantine (González-Padilla & Tortolero-Blanco, 2020). Although, internet connectivity and the use of social media is limited in Low and Lower-middle income countries, research is showing that students relied on the internet and the various social platforms for their academic work, learning about COVID-19, and interpersonal communication (e.g., Almahasees et al., 2021). Some studies in high-income-countries are showing that social media use has contributed significantly to fear of contracting COVID-19 (e.g., Bendau et al., 2021; Wheaton et al., 2021), however, much examination of this pattern has not been done in low-income countries. Existing research, however, is showing psychological distress among students in recent times to be associated with fear of COVID-19 (Oti-Boadi et al., 2021) but none have examined yet a relationship between social media use and fear of COVID-19 among students.

Social media, gender and Fear of COVID-19

The excessive use of social media during the pandemic has been linked with psychological problems. For instance, Majeed et al. (2020) found that increased social media use during the current pandemic was linked to fear of COVID-19 and depression among employees. The situation was not different among students, as increased usage of social media has severe consequences for students' psychological health (Radwan et al., 2020; Xue et al., 2021). In addition, while reports show associations between higher to excessive use of social media and different behavioral outcomes, there may be differential impacts by gender (Di Crosta et al., 2020; Flesia et al., 2020; Mazza et al., 2020; Xue et al., 2021). For example, Xue et al. (2021) found that male university students used more Social Networking Sites (SNS) and had a higher situational humor response than female university students, while female university students reported a higher fear related to COVID-19 disease. Heffner et al. (2021) also found that variables such as trait anxiety, gender, and social media consumption were the strongest predictors of increasing emotional distress. Further, Hou and colleagues (2021) noted in their study that while females experienced more severe stress and anxiety symptoms, males showed better resilience to stress. Females also spent more time on social media for COVID-19 related information, and experienced more stress. Overall, females

report more mental health issues (Di Crosta et al., 2020), greater perceived stress (Flesia et al., 2020), and showed an increase in psychiatric symptoms following the transmission of COVID-19 (Mazza et al., 2020). While highlighting the gender difference in social media usage and psychological distress, Wheaton and colleagues (2021) found in their study that people experienced stressful emotions vicariously as well, where people are able to adopt the emotional reaction of others through social media.

The Current Study

While the COVID-19 pandemic has profoundly affected people and countries physically, socially, and psychologically, the effects on student life are equally disturbing (e.g., Di Crosta et al., 2020; Li et al., 2021) as many students have had to stay connected to their academic work, friends, and family through social media. Several studies have also noted that excessive use of social media during the COVID-19 pandemic contributed significantly to mental health issues experienced by students as they were exposed to myriad of information and feared stimuli presented on COVID-19 (e.g., Boursier et al., 2020). During the pandemic, males used blogs, media-sharing sites, social questioning and answering and user reviews more frequently than females (Alsharaway et al., 2020; Broche-Pérez et al., 2020), however, females were reported to have more emotional problems associated with social media use than males (Flesia et al., 2020; Radwan et al., 2020). It is therefore inevitable to ignore the gender differences in the use of social media and its potential impact on fear of COVID-19. So far, little is known about the role of gender in understanding the associations between social media and fear of COVID-19. Further, there is a paucity of research on social media and fear of COVID-19 among university students especially in lower middle-income countries where social media usage is on the surge due to the onset of the COVID-19 pandemic. We therefore examined the influence of gender in the relationship between social media use and fear of COVID-19 amongst Ghanaian students (as shown in Figure 1). This study has the potential to contribute to better intervention programs for university students.

Methods

Design and procedure

This study was part of a larger project investigating the impact of COVID-19 on Ghanaian students. Data was collected online during June and July, 2020, among University of Ghana students via their social media group platform: WhatsApp. The inclusion criteria to participate in the study were (i) to be aged 18 years or older (ii) be a Ghanaian attending the University of Ghana, and (iii) understand English. Participants voluntarily clicked on the survey, gave their informed consent before responding to the battery of measures provided. The broad survey has measures that assessed fear of COVID-19, their coping strategies, social media usage and psychological distress. Demographic questions were also asked. Participants accessed the survey by clicking on the shared link.

Participants

A total of 214 students completed the online survey but data of 5 students were screened out because of 50% incomplete or missing responses. The majority of the remaining 209 sample consisted of females (64.1%), third-year students (36.8%), and were religious (93.8%). The ages of these students ranged from 18-28 ($M = 21.54$, $SD = 2.04$). All students were active users of social media. However, a greater proportion of students (27%) registered accounts on seven (7) different social media applications with WhatsApp being the most popular amongst males and females. In addition, more males were registered users of Facebook and Twitter whereas a female dominance was observed on the other social media applications as depicted in Figure 2.

Measures

Social media use integration scale (Jenkins-Guarnieri et al., 2013). This is a 10-item scale that measures social media use, emotional and behavioral responses to social cues. An example of the questions is “I post social networking updates that prompt friends to ask me what is going on.”. The scale is measured on a six-point Likert scale from 1 (strongly disagree) to 6 (strongly agree), with higher scores indicating high social media usage. This scale has been used repeatedly and has documented high reliability and validity across different samples (Jenkins-Guarnieri et al., 2013; Shensa et al., 2018). For this study Cronbach alpha was .79.

Fear of COVID-19 (FCV-19; Ahorsu et al. 2020). The seven-item scale is a popular and well used scale that examines participant’s fear of the COVID -19 virus. A sample question is “When watching news stories about coronavirus-19 on social media, I become nervous or anxious.” Items are scored on a 5-point Likert scale with 1= strongly disagree to 5=strongly agree, where higher scores indicate increased fear of COVID -19. In addition to the string of data supporting the validity and reliability of this scale (Ahorsu et al. 2020, Oti-Boadi et al, 2021; Reznik et al., 2021), the Cronbach alpha for this scale within this sample was .86.

Demographic Questions: Participants self-reported their age, gender, year in university, and type of social media apps/accounts they have.

Data Analysis

Data analyses were conducted in IBM SPSS version 24 with an alpha level pegged at 5% ($\alpha = .005$). To begin, descriptive analysis was performed calculating the frequencies, means, standard deviations, kurtosis, skewness and reliabilities of the study variables. As seen in Table 1, skewness (± 3), kurtosis (± 3) and Cronbach’s alpha ($\alpha > .70$) were within acceptable ranges (Field, 2016). Next, an independent t-test was performed to compare gender differences on the scores of social media use and fear of COVID-19. We then examined the relationship between gender, social media use and fear of COVID-19 using Pearson’s correlation analysis. Lastly, moderation analysis (Figure 1) was conducted with the PROCESS Macro installed over SPSS (Model 1, Hayes & Rockwood, 2020) to test the moderating effects of gender (M) between social media use (X) and fear of COVID-19 (Y). The statistical significance of the moderation was set at 95% confidence intervals (CI) with the recommended 5000 bootstrap samples (Hayes, 2012). Graphical tools were also used to plot the simple slope for the moderation results.

Table 1 Summary of descriptive statistics, reliabilities, and zero-order correlation between study variables

Variables	1	2	3	M (SD)	α	Skewness	Kurtosis
1. Social media use	–			40.05 (7.87)	0.79	-0.13	0.56
2. Fear of COVID-19	0.18**	–		19.45 (6.04)	0.86	0.08	-0.28
3. Gender	0.05	-0.013	–				

Note. ** $p \leq .01$; * $p \leq .05$; M =Mean; SD =Standard deviation; α = Cronbach's Alpha

Results

Bivariate correlational analyses and mean comparison

The only significant association recorded in the correlation analyses was between social media use and fear of COVID-19 such that there was a small and positive relationship between the variables ($r=0.18$, $p=0.009$). See result on Table 1.

Results as depicted in Figure 3 shows that males ($M=40.59$, $SD=7.40$) scored slightly higher on social media use than females ($M=39.74$, $SD=8.13$), however this difference was not significant, $t(207) = -0.75$, $p=0.455$. With regards to fear of COVID-19, the scores for females ($M=19.51$, $SD=5.99$) was somewhat higher than that of males ($M=19.35$, $SD=6.17$), but again, this difference was not statistically significant, $t(207) = 0.188$, $p=0.851$.

Gender as a Moderator between social media use and fear of COVID-19

From Table 2, the moderation analysis in PROCESS macro regression indicated that social media use was a significant predictor of fear of COVID-19 ($B = 0.13$, $p = 0.015$), gender was not ($B = -0.25$, $p = 0.801$). However, gender was a significant moderator of the relationship between social media use and fear of COVID-19 ($B = -0.24$, $p = 0.034$, $\Delta R^2 = 0.021$). The moderation of gender added an extra 2.1% to the variance in fear of COVID-19. An examination of the interaction effect using simple slope analysis (Figure 4) shows that while females with high usage of social media turn to report higher fear of COVID-19 ($B=0.22$, $p=0.001$, 95% CI: 0.90, 0.34), this interaction effect was not significant for males.

Table 2 Moderating effects of gender between social media use and fear of COVID-19

	<i>B</i> (SE. <i>B</i>)	<i>t</i>	<i>p</i>	LLCI	ULCI
Constant	19.50 (0.41)	47.57	.0000	18.69	20.30
Social media use (SMU)	0.13 (0.05)	2.46	0.015	0.03	0.23
Gender	-0.22 (0.86)	-0.25	0.801	-1.90	1.47
SMU x Gender	-0.24 (0.11)	-2.13	0.034	-0.46	-0.02
Model Summary	$F(3, 205) = 3.89, p=0.01, R^2=0.054$				

Discussion

The relationship between social media use and fear of COVID-19 amongst Ghanaian undergraduate students was tested in this study. We found a small but positive relationship between these variables. No significant gender differences were observed in the mean score of these variables. Additional results from moderation analysis suggest that females with higher use of social media were susceptible greater fears of COVID-19.

Our first finding suggests that increasing use of social media is related to high rate of fear of COVID-19 amongst students. This finding corroborates with a wide range of studies that have reported the positive links of problematic social media usage with increasing fear of COVID-19 (Bendau et al., 2021; et al., 2020; Majeed et al., 2020), perceived threat and panic of COVID-19 (Mahmood et al., 2021; Radwan et al., 2020), emotional loneliness (Alheneidi et al., 2021; Bonsaksen et al., 2021, psychological distress, anxiety and depression (Hammad & Alqarni, 2021; Neil et al., 2021; Heffner et al., 2021) during the early days of the pandemic. Since the COVID-19 outbreak, and due to the movements and social restrictions, there has been a record surge in the use of social media among the youth to gather and share information about the pandemic, communicate with loved ones, to study and finish assignments, among others (Al-Dwaikat et al., 2020). Despite these many usefulness, social media platforms have also served as a repository for the number of people contracting the virus, the number of people in isolation centers, the death rates in various countries, information overload including misinformation and misconceptions about the virus and care of patients (Ali, 2020; Gabarron et al., 2021). Even in Ghana, a recent publication reveals that misinformation and misconception that COVID-19 was being used as a biological weapon against developed economies, for example, was widespread on social media (Tabong & Segtub, 2021). Since negative and fear-laden news generally spreads faster than healthy positive news, such negative pieces of information and news get more attention on social media about COVID-19, and thus had the potential of creating fear and panic amongst people including our sample.

Regarding gender, although no significant gender differences in social media use and fear of COVID-19 were found, our results from moderation analysis suggest that females who reported higher use of social media were inclined to experience greater fear of the pandemic. This is consistent with studies by Broche-Pérez et al., (2020) and Alsharaway et al. (2020) which revealed higher levels of COVID-19 fear and risk

perception in females. In a related study that focused on younger school students than our sample, Radwan and colleagues (2020) found that females consumed a higher amount of COVID-19 related news than males from Facebook. According to Alsharaway et al. (2020), females in their study were likely to experience COVID-19 fear more than males because of higher affective intensity, making females more emotionally predisposed to experiencing and expressing negative emotions. Bearing this in mind, females in our study who maintained prolonged social media usage during the peak of the pandemic may have been vulnerable to consuming negative COVID-19 related information and this may have caused emotional distress and heightened fear. The gender differences in fear could also be explained with the gender role socialization theory (Mansfield et al., 2003). According to this theory, the expression of fear is incompatible with the masculine gender role; thus, boys are encouraged to suppress their fears. In contrast, the feminine gender role encourages girls to express their distress and seek social support rather than muting their fears.

Implications

The findings of this study is a call on stakeholders and social media content creators to implement programs that educate and raise public awareness on the appropriate use of social media and ways to identify false spread of information including those related to COVID-19. Also, stakeholders should invest in establishing new or augmenting existing youth-friendly online mental health services and interventions to assist individuals who have fears or anxiety because of negative news about COVID-19 displayed on social media. Finally, tutorials on critical thinking and self-care may be relevant to guide students to identify stressors from social media and the environment, as well as simple self-care strategies. This would be useful in the era of limited-in-person contact from counsellors and health professionals. Currently as we write, COVID-19 still exists predominantly as the OMICRON variant (WHO, 2021b). We cannot be certain whether this would be the last variant, therefore interventions mentioned are still relevant for the times and in preparation for future outbreaks.

Strengths and Weaknesses

Even though our study employed a large sample size and data was collected using rigorous procedures, it does have some limitations worth mentioning. First, data were gathered via an online self-report questionnaire. It is possible that participants' bias and intentional misreporting will have an impact on the data's accuracy. Furthermore, the study only looked at the relationship between social media and the fear of COVID-19, and not whether social media had an impact on students' fear and anxiety levels before the pandemic. Future studies could examine retrospectively pre-COVID 19 fear and anxiety levels and compare to levels during the COVID-19 era. Finally, because the dataset was gathered in a cross-sectional fashion, we only report correlational findings rather than cause-and-effect relationships. It is suggested that future research explore these variables using a longitudinal design.

Conclusion

The relationship between social media use and fear of COVID-19 amongst Ghanaian undergraduate students was examined. We found out that social media use had a small and positive correlation with fear of COVID-19. Findings also revealed that excessive usage of social media and the heightened levels of fear of COVID-19 was significant only among females. It is therefore critical to consider educating youth on how and encouraging them to best utilize media platforms to help overcome some of the psychological issues associated with COVID-19.

Declarations

Ethics approval and consent to participate

This study which was part of a bigger project went through institutional review of the second author's institution and was cleared for study. Specifically, it got approval from the ethics committee, Department of Psychology, University of Ghana (DREC/016/19–20). All processes and procedures in this study were conducted in accordance with the ethical standards and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

There was no compensation for participation in this study.

Consent for Publication

Not applicable

Availability of Data and Material

The dataset generated and/or analyzed during the current study is available from the corresponding author on reasonable request.

Competing interest

The authors declare no competing interests.

Funding

The authors did not receive support from any organization for the submitted work.

Author contributions

E.M. M.O.& N.E.Y.D conceptualized the study. N.E.Y.D. analyzed and E.M. M.O., and N.E.Y.D interpreted the data. E.M., M.O, N.E.Y.D., A.E.A. & G.O were all involved in drafting the manuscript. All authors were involved in revising the manuscript and have approved the final version for publication.

Acknowledgement

We are grateful to all the students who voluntarily participated in this study.

References

1. Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2020). The fear of COVID-19 scale: development and initial validation. *International Journal of Mental Health and Addiction*, 1–9.
2. Al-Dwaikat, T. N., Aldalaykeh, M., & Rababa, M. (2020). The relationship between social networking sites usage and psychological distress among undergraduate students during COVID-19 lockdown. *Heliyon*, 6(12), e05695.
3. Alheneidi, H., AlSumait, L., AlSumait, D., & Smith, A. P. (2021). Loneliness and problematic internet use during COVID-19 lock-down. *Behavioral Sciences*, 11(1), 5.
4. Ali, S. (2020). Combatting against COVID-19 & misinformation: A systematic review. *Human Arenas*, 1–16. <https://doi.org/10.1007/s42087-020-00139-1>
5. Almahasees, Z., Mohsen, K., & Amin, M. O. (2021). Faculty's and students' perceptions of online learning during COVID-19. *Frontiers in Education*, 6, 638470.
6. Alonzo, R., Hussain, J., Stranges, S., & Anderson, K. K. (2021). Interplay between social media use, sleep quality, and mental health in youth: A systematic review. *Sleep Medicine Reviews*, 56, 101414.
7. Alsharawy, A., Spoon, R., Smith, A., & Ball, S. (2021). Gender differences in fear and risk perception during the COVID-19 pandemic. *Frontiers in Psychology*, 3104. <https://doi.org/10.3389/fpsyg.2021.689467>
8. Anwar, A., Malik, M., Raees, V., & Anwar, A. (2020). Role of Mass Media and Public Health Communications in the COVID-19 Pandemic. *Cureus*, 12(9), e10453. <https://doi.org/10.7759/cureus.10453>
9. Asmundson, G. J., & Taylor, S. (2020). How health anxiety influences responses to viral outbreaks like COVID-19: What all decision-makers, health authorities, and health care professionals need to know. *Journal of Anxiety Disorders*, 71, 102211.
10. Bendau, A., Petzold, M. B., Pyrkosch, L., Maricic, L. M., Betzler, F., Rogoll, J., ... Plag, J. (2021). Associations between COVID-19 related media consumption and symptoms of anxiety, depression and COVID-19 related fear in the general population in Germany. *European archives of psychiatry and clinical neuroscience*, 271(2), 283–291.
11. Bonsaksen, T., Ruffolo, M., Leung, J., Price, D., Thygesen, H., Schoultz, M., & Geirdal, A. Ø. (2021). Loneliness and its association with social media use during the COVID-19 outbreak. *Social Media + Society*, 7(3), 20563051211033821.
12. Boursier, V., Gioia, F., Musetti, A., & Schimmenti, A. (2020). Facing loneliness and anxiety during the COVID-19 isolation: the role of excessive social media use in a sample of Italian adults. *Frontiers in Psychiatry*, 1380.

13. Broche-Pérez, Y., Fernández-Fleites, Z., Jiménez-Puig, E., Fernández-Castillo, E., & Rodríguez Martín, B. C. (2020). Gender and fear of COVID-19 in a Cuban population sample. *International Journal of Mental Health and Addiction*, 1–9.
14. Camargo, C. P., Tempiski, P. Z., Busnardo, F. F., Martins, M. D. A., & Gemperli, R. (2020). Online learning and COVID-19: a meta-synthesis analysis. *Clinics*, 75.
15. Di Crosta, A., Palumbo, R., Marchetti, D., Ceccato, I., La Malva, P., Maiella, R., ... Di Domenico, A. (2020). Individual differences, economic stability, and fear of contagion as risk factors for PTSD symptoms in the COVID-19 emergency. *Frontiers in Psychology*, 2329.
16. Durante, R., Guiso, L., & Gulino, G. (2021). Asocial capital: Civic culture and social distancing during COVID-19. *Journal of Public Economics*, 194, 104342.
17. Flesia, L., Monaro, M., Mazza, C., Fietta, V., Colicino, E., Segatto, B., & Roma, P. (2020). Predicting perceived stress related to the Covid-19 outbreak through stable psychological traits and machine learning models. *Journal of Clinical Medicine*, 9(10), 3350.
18. Gabarron, E., Oyeyemi, S. O., & Wynn, R. (2021). COVID-19-related misinformation on social media: a systematic review. *Bulletin of the World Health Organization*, 99(6), 455.
19. Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., ... Dai, J. (2020). Mental health problems and social media exposure during COVID-19 outbreak. *Plos One*, 15(4), e0231924.
20. González-Padilla, D. A., & Tortolero-Blanco, L. (2020). Social media influence in the COVID-19 pandemic. *International Braz j urol*, 46, 120–124. <https://doi.org/10.1590/S1677-5538.IBJU.2020.S121>
21. Hammad, M. A., & Alqarni, T. M. (2021). Psychosocial effects of social media on the Saudi society during the Coronavirus Disease 2019 pandemic: A cross-sectional study. *Plos one*, 16(3), e0248811.
22. Hayes, A. F. (2012) PROCESS: A Versatile Computational Tool for Observed Variable Mediation, Moderation, and Conditional Process Modeling [White paper]. Available at: <http://www.afhayes.com/public/process2012.pdf>
23. Hayes, A. F., & Rockwood, N. J. (2020). Conditional process analysis: Concepts, computation, and advances in the modeling of the contingencies of mechanisms. *American Behavioral Scientist*, 64(1), 19–54. <https://doi.org/10.1177/0002764219859633>
24. Heffner, J., Vives, M. L., & Feldman Hall, O. (2021). Anxiety, gender, and social media consumption predict COVID-19 emotional distress. *Humanities and Social Sciences Communications*, 8(1), 1–7.
25. Henssler, J., Stock, F., van Bohemen, J., Walter, H., Heinz, A., & Brandt, L. (2021). Mental health effects of infection containment strategies: quarantine and isolation—a systematic review and meta-analysis. *European Archives of Psychiatry and Clinical Neuroscience*, 271(2), 223–234.
26. Islam, A. N., Laato, S., Talukder, S., & Sutinen, E. (2020). Misinformation sharing and social media fatigue during COVID-19: An affordance and cognitive load perspective. *Technological Forecasting and Social Change*, 159, 120201
27. Jenkins-Guarnieri, M. A., Wright, S. L., & Johnson, B. (2013a). Development and validation of a social media use integration scale. *Psychology of Popular Media Culture*, 2(1), 38.

28. Jenkins-Guarnieri, M. A., Wright, S. L., & Johnson, B. D. (2013b). The interrelationships among attachment style, personality traits, interpersonal competency, and Facebook use. *Psychology of Popular Media Culture*, 2(2), 117. <https://psycnet.apa.org/doi/10.1037/a0030946>
29. Li, L., Aldosery, A., Vitiugin, F., Nathan, N., Novillo-Ortiz, D., Castillo, C., & Kostkova, P. (2021). The response of governments and public health agencies to COVID-19 pandemics on social media: a multi-country analysis of twitter discourse. *Frontiers in Public Health*, 1410.
30. Li, Y., Wang, A., Wu, Y., Han, N., & Huang, H. (2021). Impact of the COVID-19 pandemic on the mental health of college students: A systematic review and meta-analysis. *Frontiers in psychology*, 12.
31. Lin, C. Y., Broström, A., Griffiths, M. D., & Pakpour, A. H. (2020). Investigating mediated effects of fear of COVID-19 and COVID-19 misunderstanding in the association between problematic social media use, psychological distress, and insomnia. *Internet Interventions*, 21, 100345.
32. Majeed, M., Irshad, M., Fatima, T., Khan, J., & Hassan, M. M. (2020). Relationship between problematic social media usage and employee depression: a moderated mediation model of mindfulness and fear of CoViD-19. *Frontiers in Psychology*, 11, 3368.
33. Mahmood, Q. K., Jafree, S. R., Mukhtar, S., & Fischer, F. (2021). Social Media Use, Self-Efficacy, Perceived Threat, and Preventive Behavior in Times of COVID-19: Results of a Cross-Sectional Study in Pakistan. *Frontiers in Psychology*, 12, 2354.
34. Mazza, M. G., Palladini, M., De Lorenzo, R., Bravi, B., Poletti, S., Furlan, R., ... Benedetti, F. (2022). One-year mental health outcomes in a cohort of COVID-19 survivors. *Journal of Psychiatric Research*, 145, 118–124.
35. McLaughlin, C. J., & Sillence, E. (2018). Buffering against academic loneliness: The benefits of social media-based peer support during postgraduate study. *Active Learning in Higher Education*, 1469787418799185.
36. Neill, R. D., Blair, C., Best, P., McGlinchey, E., & Armour, C. (2021). Media consumption and mental health during COVID-19 lockdown: a UK cross-sectional study across England, Wales, Scotland and Northern Ireland. *Journal of Public Health*, 1–9.
37. Oti-Boadi, M., Malm, E., Dey, N. E. Y., & Oppong, S. (2021). Fear of COVID-19: Psychological distress and coping among university students in Ghana. *Current Psychology*, 1–11.
38. Pennington, N. (2021). Communication outside of the home through social media during COVID-19. *Computers in human behavior reports*, 4, 100118. <https://doi.org/10.1016/j.chbr.2021.100118>
39. Petzold, M. B., Bendau, A., Plag, J., Pyrkosch, L., Mascarell Maricic, L., Betzler, F., ... Ströhle, A. (2020). Risk, resilience, psychological distress, and anxiety at the beginning of the COVID-19 pandemic in Germany. *Brain and behavior*, 10(9), e01745.
40. Radwan, E., Radwan, A., & Radwan, W. (2020). The role of social media in spreading panic among primary and secondary school students during the COVID-19 pandemic: An online questionnaire study from the Gaza Strip, Palestine. *Heliyon*, 6(12), e05807.
41. Rasmussen, E. E., Punyanunt-Carter, N., LaFreniere, J. R., Norman, M. S., & Kimball, T. G. (2020). The serially mediated relationship between emerging adults' social media use and mental well-being.

Computers in Human Behavior, 102, 206–213.

42. Reznik, A., Gritsenko, V., Konstantinov, V., Khamenka, N., & Isralowitz, R. (2021). COVID-19 fear in Eastern Europe: validation of the fear of COVID-19 scale. *International Journal of Mental Health and Addiction, 19*(5), 1903–1908.
43. Rogowska, A. M., Pavlova, I., Kuśnierz, C., Ochnik, D., Bodnar, I., & Petrytsa, P. (2020). Does physical activity matter for the mental health of university students during the COVID-19 pandemic? *Journal of Clinical Medicine, 9*(11), 3494.
44. Romero-Blanco, C., Rodríguez-Almagro, J., Onieva-Zafra, M. D., Parra-Fernández, M. L., Prado-Laguna, M., & Hernández-Martínez, A. (2020). Physical Activity and Sedentary Lifestyle in University Students: Changes during Confinement Due to the COVID-19 Pandemic. *International journal of environmental research and public health, 17*(18), 6567. <https://doi.org/10.3390/ijerph17186567>
45. Sasu, D. D. (2020). Leading social media platforms in Ghana 2020. *Statista.com*. <https://www.statista.com/statistics/1171534/leading-social-media-platforms-ghana/>
46. Shensa, A., Sidani, J. E., Dew, M. A., Escobar-Viera, C. G., & Primack, B. A. (2018). Social media use and depression and anxiety symptoms: A cluster analysis. *American Journal of Health Behavior, 42*(2), 116–128.
47. Stroud, I., & Gutman, L. M. (2021). Longitudinal changes in the mental health of UK young male and female adults during the COVID-19 pandemic. *Psychiatry Research, 303*, 114074.
48. Tabong, P. T. N., & Segtub, M. (2021). Misconceptions, misinformation and politics of COVID-19 on Social Media: A multi-level analysis in Ghana. *Frontiers in Communication, 6*, 70.
49. Tausczik, Y., Faasse, K., Pennebaker, J. W., & Petrie, K. J. (2012). Public anxiety and information seeking following the H1N1 outbreak: blogs, newspaper articles, and Wikipedia visits. *Health Communication, 27*(2), 179–185.
50. Wheaton, M. G., Prikhidko, A., & Messner, G. R. (2021). Is fear of COVID-19 contagious? The effects of emotion contagion and social media use on anxiety in response to the coronavirus pandemic. *Frontiers in Psychology, 11*, 3594.
51. World Health Organization (WHO, 2020). Coronavirus disease (COVID-19). Retrieved from https://www.who.int/health-topics/coronavirus#tab=tab_1
52. World Health Organization (WHO, 2021). Coronavirus disease (COVID-19): How is it transmitted? Retrieved from <https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-covid-19-how-is-it-transmitted>
53. World Health Organization (WHO, 2021b). Enhancing response to Omicron SARS-CoV-2 variant. Retrieved from [https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-\(b.1.1.529\)-technical-brief-and-priority-actions-for-member-states](https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-(b.1.1.529)-technical-brief-and-priority-actions-for-member-states)
54. Xie, L., Natsev, A., Kender, J. R., Hill, M., & Smith, J. R. (2011, November). Visual memes in social media: tracking real-world news in youtube videos. In *Proceedings of the 19th ACM international conference on Multimedia* (pp. 53–62).

55. Xue, D., Liu, T., Chen, X., Liu, X., & Chao, M. (2021). Data on media use and mental health during the outbreak of COVID-19 in China. *Data in Brief*, *35*, 106765.
56. Yip, P. S., & Chau, P. H. (2020). Physical distancing and emotional closeness amidst COVID-19. *Crisis*, *41*(3), 153–155. <https://doi.org/10.1027/0227-5910/a000710>
57. Zhan, L., Sun, Y., Wang, N., & Zhang, X. (2016). Understanding the influence of social media on people's life satisfaction through two competing explanatory mechanisms. *Aslib Journal of Information Management*, *68*(3), 347–361. <https://doi.org/10.1108/AJIM-12-2015-0195>

Figures

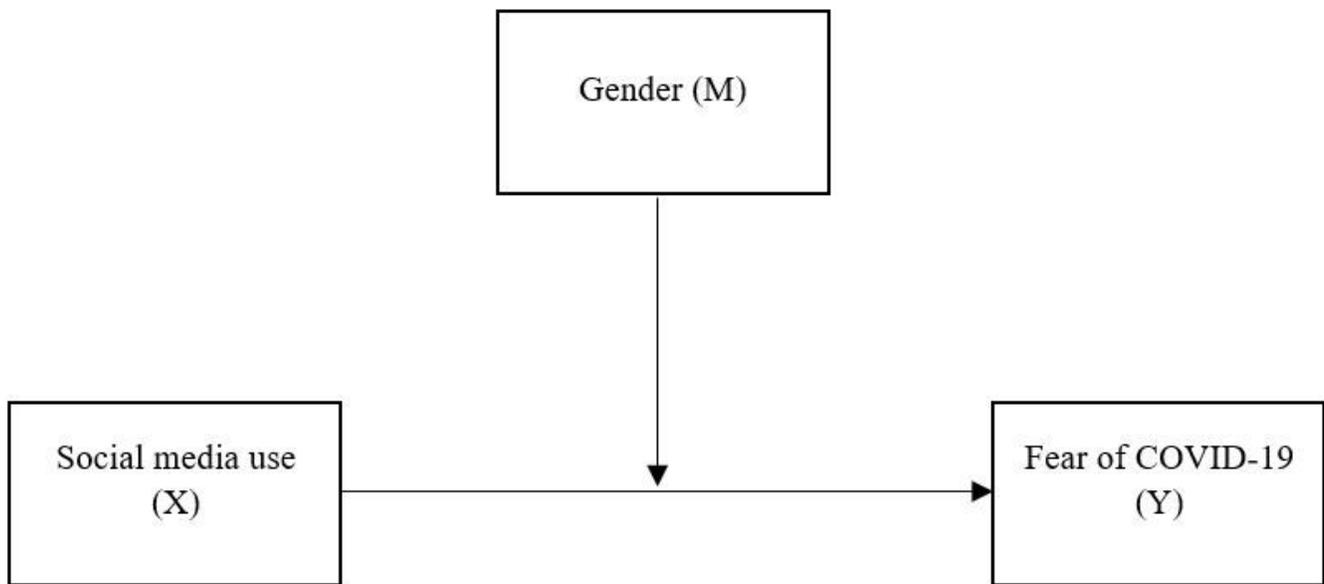


Figure 1

Proposed model testing the moderation of gender between social media use and fear of COVID-19

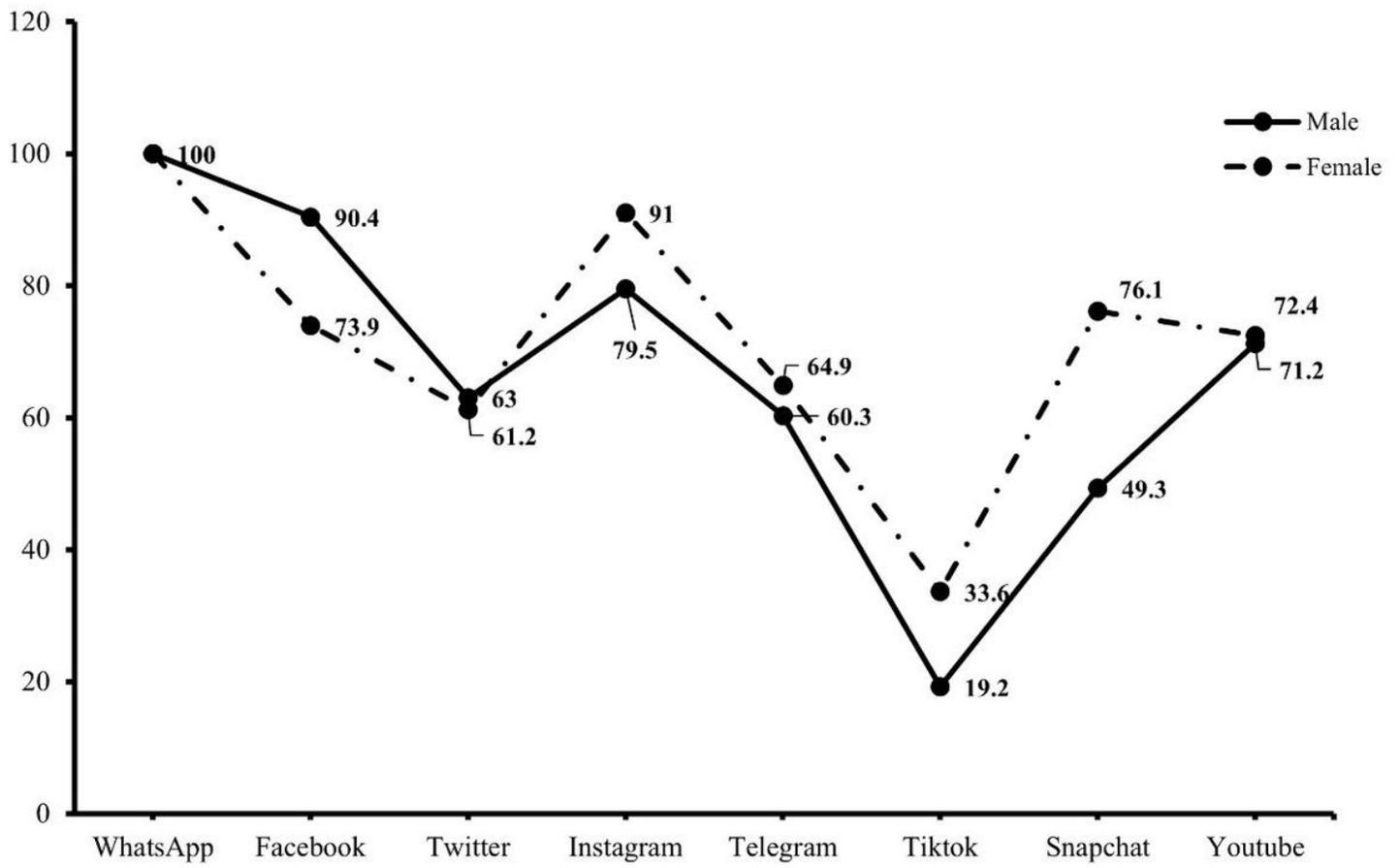


Figure 2

Distribution of social media applications ownership and usage by gender

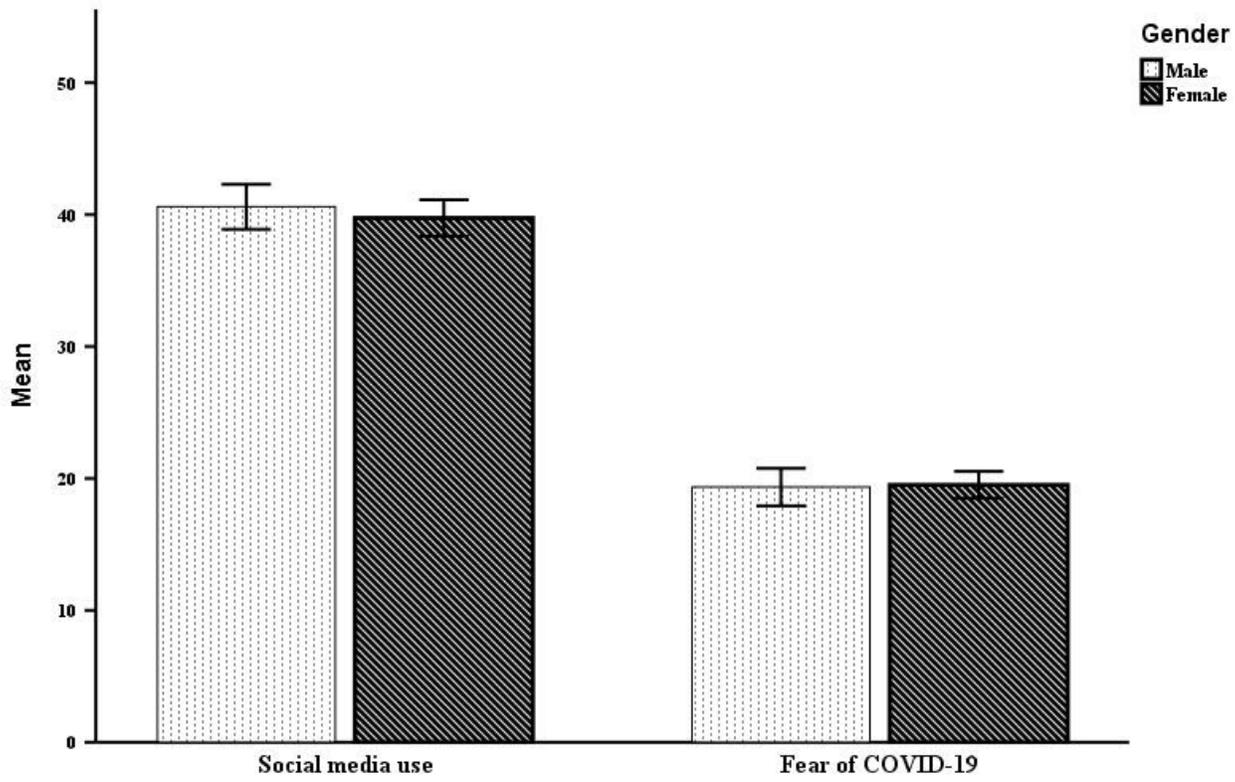


Figure 3

Gender differences in scores of the fear of COVID-19 and social media use

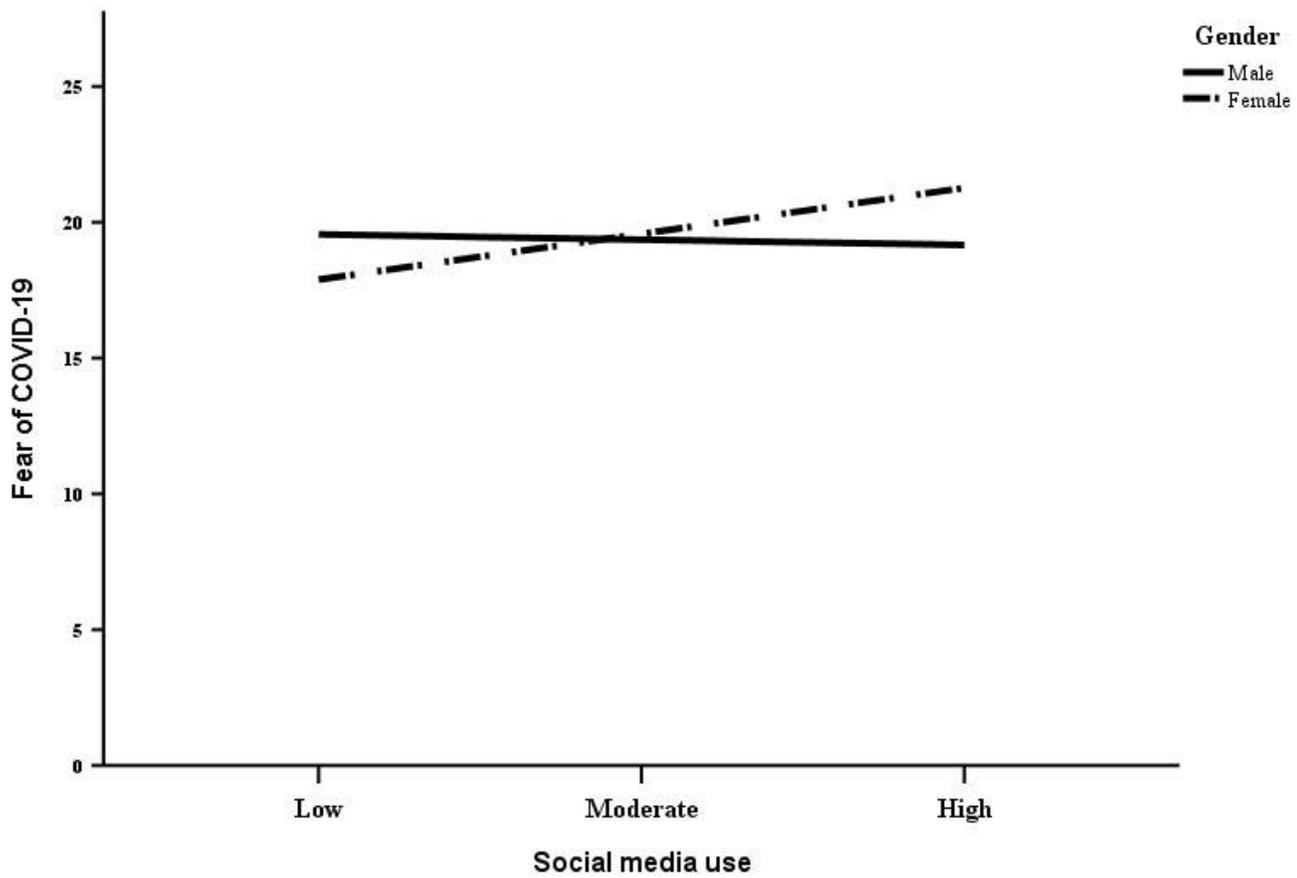


Figure 4

Simple slope depicting the effect of gender on the relationship between social media use and the fear of COVID-19