



Coping strategies of individuals in the United Kingdom during the COVID-19 pandemic

Ifeanyichukwu Anthony Ogueji¹ · Maia Makeda Okoloba² · Benie McDenisa Demoko Ceccaldi²

Accepted: 22 December 2020 / Published online: 3 January 2021

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC part of Springer Nature 2021

Abstract

The United Kingdom (UK) was among the hardest-hit by the COVID-19 pandemic. It is, therefore, imperative to understand the coping strategies of individuals in the UK during the pandemic to develop appropriate programs and policies for them. A heterogeneous sample of 50 UK residents (15 males & 35 females) with an age range of 18–55 years were recruited using a snowball technique from Facebook between April and May 2020. Participants responded to 4 open-ended questions (that were generated through consultation with literature and 2 health practitioners) that sought to explore their coping strategies during the COVID-19 pandemic. Thematic analysis was applied to analyze data using a data-driven method. Eleven themes were found: “socializing with loved ones (e.g., through video calls)”, “engaging in exercise”, “being occupied with jobs”, “being occupied with studies”, “avoiding negative news on COVID-19”, “consumption of alcohol”, “healthy eating”, “engaging in meditation activities”, “gaming activities”, “hope”, and “self-care and self-appreciation”, in that order. Positive and maladaptive coping strategies were employed by some individuals in the UK during the COVID-19 pandemic. This, therefore, echoes the need for appropriate psychosocial support programs that strengthen positive coping strategies and mitigate maladaptive coping strategies during the COVID-19 pandemic.

Keywords Coping strategies · COVID-19 pandemic · Qualitative research · U.K.

Introduction

Many studies have investigated the physical and mental health consequence of the coronavirus disease 2019 (COVID-19) on people in hard-hit countries (e.g., Nicomedes, Avila, & Arpia, 2020; Okoloba, Ogueji, Darroch, & Ogueji, 2020; Olaseni, Akinsola, Agberotimi, & Oguntayo, 2020; Sun et al., 2020; Zhang & Ma, 2020). Most of these studies often found symptoms of anxiety, depression, and sleep problems among participants. Despite this, very little or no study was found to have explored the coping strategies employed by individuals against the pandemic in hard-hit countries. The coping strategy employed by people whose health is threatened by the COVID-19 pandemic is imperative given the fact that employing

positive coping strategies could reduce the adverse impacts of the pandemic on people (Xiang et al., 2020). Compared to most other countries or nations, the United Kingdom (UK) was among the hardest-hit by the COVID-19 pandemic (World Health Organization, 2020). Consequently, the current study aimed to explore the coping strategies of individuals in the UK during the COVID-19 pandemic.

Literature has found that when people are faced with stressful situations or uncertainties, positive coping strategies such as seeking social support, being compassionate, engaging in exercises, cognitive acceptance, avoidance of threatening thoughts, or positive thinking may be helpful (Hajian, Mehrabi, Simbar, & Houshyari, 2017; Ogueji & Okoloba, 2020; Ogueji & Olley, 2019; Prati & Pietrantonio, 2009; Van Der Zwan, De Vente, Huizink, Bögels, & De Bruin, 2015). In other studies, maladaptive coping strategies such as alcohol consumption, self-blame, or suicidal thoughts have been found among people facing stressful situations (Cook et al., 2016; Liang et al., 2020). In previous infectious disease outbreaks, the research found coping strategies such as avoidant behaviors, emotion-focused coping, problem-focused coping, humor, or religious coping to be often employed by individuals (Marjanovic, Greenglass, & Coffey, 2007; Phua, Tang, & Tham, 2005; Sim, Chan, Chong, Chua, & Soon, 2010;

✉ Ifeanyichukwu Anthony Ogueji
ifeanyiogueji21@gmail.com

¹ Department of Psychology, Faculty of the Social Sciences, University of Ibadan, Ibadan, Oyo State, Nigeria

² Department of Psychology, The University of Buckingham, Yeomanry House, Buckingham, Buckinghamshire MK18 1EG, UK

Yeung & Fung, 2007). The submissions from related studies agree with the Lazarus and Folkman (1984) theory of stress and coping which postulates that when faced with stressful situations, people employ methods that they perceive will enable stress reduction for them. Therefore, this theory will guide the current study.

Although the above literature may help inform psychosocial support programs for people faced with stressful situations; it is, however, uncertain that it would be helpful for people who are affected by the novel COVID-19 pandemic that has changed the way of life for almost everyone in the world at present (Okoloba et al., 2020; Xiang et al., 2020), particularly people in the UK that was among the hardest-hit countries (Williams, Armitage, Tampe, et al., 2020; World Health Organization, 2020). Therefore, the below research question was explored:

What are the coping strategies of individuals in the UK during the COVID-19 pandemic?

Method

Participants

To be enrolled in this qualitative open-ended study, it was required that participants were adults (18 years or greater), directly or indirectly experiencing the COVID-19 pandemic, and were residents in the UK during the COVID-19 pandemic. A total of 50 participants (15 males & 35 females) were recruited through a snowball technique via Facebook (targetting various Facebook groups for UK residents) from 8th April 2020 to 14th May 2020, when the UK was at the peak of the first wave of the pandemic. The snowball technique worked as we sent out the survey link on Facebook and highlighted that participants who filled out the survey should roll it out to their counterparts.

A total of 72 participants attempted our survey; however, 50 participants had complete data while 22 participants did not have complete data or were not UK residents during the pandemic. Our sample size ($n = 50$) was also informed by our observation of data saturation while data collection was ongoing. The 50 participants' ages ranged from 18 to 55 years. Forty-four participants had acquired higher education (e.g., Bachelor's degree, Master's degree, or Ph.D.) while 6 participants had acquired education from high school. Twenty participants identified as White British, 10 identified as Black or Black British, 9 identified as Asian or Asian British, and 11 identified as other (see Appendix Table 1).

Materials

Utilizing the survey monkey tool, we designed questions that obtained demographic information [gender, age, country of residence, highest education attained, ethnicity, and are you directly or indirectly affected by the COVID-19 pandemic? (Yes/

No)]. Next were four (4) open-ended questions that sought to explore the coping strategies employed by participants during the COVID-19 pandemic. Above the open-ended questions, we clearly stated that participants should freely provide detailed responses because of the qualitative nature of the research. Based on literature (Okoloba et al., 2020; Xiang et al., 2020), and consultation with 2 mental health practitioners (1 clinical health psychologist & 1 psychiatrist) the 4 open-ended questions were:

1. What are your coping strategies during this period of the COVID-19 pandemic? Discuss extensively.
2. What keeps you going during this time of the COVID-19 pandemic? Discuss extensively.
3. What health behaviors are you practicing to prevent yourself from contracting COVID-19? Discuss extensively.
4. Is there anything else about your coping strategy during the COVID-19 pandemic that you would like to discuss? If yes, discuss extensively.

These questions were considered for the fact that they enabled participants to report their coping strategies without restricted responses, thus allowing the researchers to understand the coping strategies of participants from the perspective of participants (Elliott & Timulak, 2005). All questions were not compulsory, except those used to assess eligibility criteria. However, we stated in the online survey that participants were encouraged to respond to all questions as much as possible. Before conducting this study, the materials were subjected to content validation from 3 professors of health psychology in the UK to ensure the appropriateness of the materials for this study.

The Procedure of Data Collection

All authors individually posted the survey link via their social media accounts to enable access to participants with diverse socio-demographic backgrounds. The authors collected data from their respective locations in the U.K. and Nigeria. The survey explained the research purpose and included an online consent form. Participation in this study was voluntary, anonymity was respected as no personally identifiable information was requested from participants, and a statement assuring participants of confidentiality was included in the survey. A statement informing participants of their rights to withdraw participation at any time without implication(s) was also included in the survey.

The last page of the survey was designed to include our contacts and requested that participants could contact us for free e-therapy services (any delivered e-therapy was supervised by the first author, given that he is a registered clinical health psychologist). In addition to this being part of our ethical consideration (Adejumo & Olorunesan, 2018), it was

done because literature strongly documented adverse mental health impacts of the pandemic on people in hard-hit countries (Nicomedes et al., 2020; Okoloba et al., 2020; Olaseni et al., 2020). After data collection, we exported data for cleaning and embarked on thematic analysis. All authors were involved in conducting the thematic analysis based on their broad experiences from conducting similar qualitative studies. However, all authors were cautious enough to prevent their broad experiences from influencing the results of the thematic analysis.

During analysis, we applied a data-driven method by reading and re-reading the responses of participants to identify themes from their responses. After themes were identified, we placed illustrative quotations under each theme, and we read and re-read each quotation to ensure its appropriateness for the theme that it was placed under. Data analysis was conducted for 1 week after which all authors openly discussed the results in order to critique it. After critiquing and amending the themes where necessary, we embarked on validation of analysis by 4 experts. In doing this, 2 psychiatrists and 2 clinical health psychologists from the National Health Service (NHS) were purposively selected. They each had 15 years of experience in mental health care practice. They were presented with the themes and quotations under them to validate that there was a consonance between each theme and the quotation(s) under it. Any disagreement was resolved by reworking the themes. Our study adhered to the consolidated criteria for reporting qualitative studies (COREQ) (Booth et al., 2014).

Results

During the thematic analysis, 11 themes were found. Each theme was presented below according to how they were found, and each quotation under each theme was labeled with the gender and age of participants.

Theme One: Socializing with Loved Ones

Most participants (about 27 participants) highlighted that they have been socializing more with loved ones as a means of coping with the COVID-19 pandemic. Theoretically, we argued based on the stress and coping model that most participants perceived socializing with loved ones as an effective means of reducing the adverse impact of the pandemic; that was, therefore, why they often employed it. Illustrative responses endorsing this theme are below:

“...Talking to people through online means and being that I am married, getting closer with my husband helps me.” (Female, 30 years).

“...My partner - living with someone who is understanding really helps. Technology - video calling friends and family has also been helpful.” (Female, 55 years).

“...I and my mum spent most the time together, I painted her nails, we did face masks etc. We kept ourselves entertained over the two weeks by playing games, watching a lot of tv, and enjoying the sun from our back garden while we could. (Female, 18 years).

A participant endorsing this theme stated how the presence of and engaging in social activities with her loved one was beneficial to her mental health. This, therefore, mirrored the importance of social activities to our mental health during the pandemic.

“...I am staying with my friend and my boyfriend is here too so we're lucky we're not on our own which is better for our mental health. We're making lists of fun activities to do like board games and cooking, and thinking of hobbies too.” (Female, 22 years)

Socializing via technology (e.g., video calling) was reinforced and reported to help the minds of participants during the pandemic.

“...Baking with my flatmates has helped a lot to get my mind off things. Also, trying to connect with those that I cannot see in person via video calls. I also still maintain contact with my family as much as possible.” (Female, 22 years).

“Checking in with family, friends, and colleagues via technology saves us a lot” (Male, 55 years)

Theme Two: Engaging in Exercise

There were many participants (about 11 participants) who submitted that engaging in exercises was a coping strategy. For instance,

“A lot of exercises have been really helping at this time of uncertainty” (Male, 49 years)

Participants supported this theme by highlighting their occasional or daily engagement in walking activities:

“My once-a-day walk, occasionally a run has been helping...” (Female, 37 years).

“Exercise - I get up at 6am to go for a long walk when it is quiet...” (Female, 24 years)

Theme Three: Being Occupied with Jobs

Some participants reported that being occupied with their jobs was a major coping strategy for them. For instance:

“Keeping on top of work has been a major coping strategy for me...” (22 male)

Male and female participants reinforced this theme by submitting that:

“I’m lucky to still have my job so that keeps me busy most of the time and distracts me from the pandemic...” (Male, 24 years).

“Work - having the structure of a full-time job enables me to feel productive and cope during the pandemic.” (Female, 24 years)

Theme Four: Being Occupied with Studies

Participants submitted that being engaged with their studies was a coping strategy. For instance:

“I am lucky to have my studies to keep me occupied for the time being and this has helped me cope thus far...” (Male, 22 years)

A female participant supported this theme by stating that she had university works to concentrate on during the pandemic.

“I have university work to concentrate on so the pandemic hasn’t affected me too much” (Female, 21 years).

Theme Five: Avoiding Negative News on COVID-19

Avoiding negative news on COVID-19 was a coping strategy for the participants.

For instance, a participant stated that she had deleted all social media and news applications as a way of avoiding negative news on COVID-19 and coping.

“I have deleted all my social media and news apps of my phone as the constant stream of COVID-19 news and panic was causing me a lot of anxiety. So, I check the news just once a day and just protect myself from it...” (Female, 28 years).

Another reported that she was distancing herself from overwhelming sources of information on COVID-19.

“...I am distancing myself from overwhelming sources of information such as negative news on COVID-19 and the social media” (Female, 18 years).

Another highlighted that she does not listen to the news on COVID-19 more than once a day.

“I don’t listen to the news on COVID-19 more than once a day as it can get stressful, I use other methods to then distract myself...” (Female, 22 years).

Theme Six: Consumption of Alcohol

For some participants, it was reported that alcohol consumption was a coping strategy during the COVID-19 pandemic.

“I am consuming a lot of alcoholic and non-alcoholic wines during this time in order to cope” (Male, 49 years)
“Drinking some alcohol to survive at this time” (Female, 22 years).

Theme Seven: Healthy Eating

Some participants reported healthy eating as another coping strategy. For instance, a participant endorsing this theme reported how much of a positive impact that healthy eating had on her during the pandemic.

“...I have been trying to eat a lot healthier and eat home-cooked food. I have noticed recently how much of an impact food has on my mental and physical health. If I eat better, I feel better. (Female, 23 years).

Theme Eight: Engaging in Meditation Activities

Many participants highlighted that their involvement in meditation activities was a strategy to cope with. For instance:

“I have been doing more yoga and meditation as this calms my mind and distracts me from the situation.” (Female, 23 years)

Another submitted thus:

“I am keeping up on my meditation against OCD (obsessive compulsive disorder) so I do not develop any new obsessions or compulsions/rituals around the virus at this time. (Female, 18 years)

Theme Nine: Gaming Activities

Many also reported that they have been gaming as a way to cope with the pandemic. An example was given below.

“My main hobby is gaming which is an escape into the virtual world and keeps my mind off the pandemic...”
(Male, 21 years).

Theme Ten: Hope

A participant who employed hope as a coping strategy simply stated below

“There is no greater time to stay hopeful than now and this is really my strategy of coping” (Female, 18 years).

Theme Eleven: Self-Care and Self-Appreciation

A participant highlighted that focusing on giving herself care and appreciation was her way of coping with the pandemic.

“During this time, I do more self-care and more of appreciating myself” (Female, 21 years).

Discussion and Implication

This qualitative study explored the coping strategies employed by individuals in one of the hardest-hit countries (the UK) by the COVID-19 pandemic. Eleven themes were found from the responses of participants. These themes were: socializing with loved ones (e.g., through video calls), engaging in exercise, being occupied with jobs, being occupied with studies, avoiding negative news on COVID-19, consumption of alcohol, healthy eating, engaging in meditation activities, gaming activities, hope, and self-care and self-appreciation, in that order.

From the above themes, it is evident that positive and maladaptive coping strategies were employed by individuals in the UK during the pandemic. Positive coping strategies employed were: socializing with loved ones (e.g., through video calls), engaging in exercise, being occupied with jobs, being occupied with studies, avoiding negative news on COVID-19, healthy eating, engaging in meditation activities, gaming activities, hope, and self-care and self-appreciation. On the other hand, the maladaptive coping strategy employed was: consumption of alcohol. A probable reason for the findings in this study could be attributed to the UK being a developed nation. That is, as a developed nation, the residents may have opportunities to employ coping strategies that are characteristics of developed nations; for instance, developed nations often have high employment and education opportunities. Therefore, it is not surprising that individuals in the UK found their involvement in their jobs or studies as

a way to cope with the global pandemic. Additionally, it is not surprising that they found socializing with loved ones (e.g., through video calls), healthy eating, or gaming activities, as a way to cope with the global pandemic.

The positive coping strategies identified in the current study were in agreement with related studies where similar coping strategies have been identified among people during times of uncertainty or stressful situations. For instance, Ogueji and Olley (2019) found that elements of social support similar to socializing with loved ones, as well as that staying hopeful had a significant positive impact on psychological wellbeing. In another study, Van Der Zwan et al. (2015) found that engaging in exercise and meditation had the potential for stress reduction. Further, Williams et al. (2020) submitted that keeping busy with works, studies, or other social activities was imperative for preventing low mood. Hajian et al. (2017) showed that avoiding threatening situations significantly buffered against health problems and enhanced coping. In a related study, attributes of compassion which included self-care and self-appreciation were found to support healthy functioning (Ogueji & Okoloba, 2020).

In comparison to the previous outbreak of infectious disease, our findings agreed with related studies where avoidant coping, and coping strategies similar to socializing with loved ones, hope, self-care, and self-appreciation were reported (e.g., Marjanovic et al., 2007; Sim et al., 2010; Yeung & Fung, 2007). Additionally, the maladaptive coping strategy identified in the current study agreed with Cook et al. (2016) who found alcohol consumption as a coping strategy employed by individuals in stressful situations. Like related studies, we had a theoretical consensus with the Lazarus and Folkman (1984) theory of stress and coping which submits that peoples' concern during stress encounter is to employ stress reduction methods that they perceive would be effective for them. Although our study had agreements with literature, our study can also be considered an extension of these related studies because our study is among the first to submit similar coping strategies employed by individuals during a global pandemic.

A psychological implication of the findings in this study is that the positive and maladaptive coping strategies employed by individuals in the UK during the COVID-19 pandemic could have different consequences on them. The positive coping strategies could serve as protective factors against the adverse mental and physical health impacts of the pandemic. On the other hand, the maladaptive coping strategy could be a risk factor for developing further health complications from the pandemic. Therefore, given our findings and the implication(s), we recommend that due to the COVID-19 pandemic, individuals in the UK need appropriate psychosocial support programs that strengthen positive coping strategies and mitigate maladaptive coping strategies.

Finally, our study is not without strengths and limitations. The qualitative method employed enabled participants to freely report their coping strategies without restricted responses, and this is a core strength of our study. However, the method of data collection could have encountered response bias as bias from participants is not inevitable in studies like this. Nonetheless, the likelihood of response bias was minimized by ensuring that no personally identifiable information was requested from participants. Further, the 3 authors of this paper are British and Nigerian, and they lived in their respective countries when this study was conducted. It thus implied that they had diverse experiences of the COVID-19 pandemic which they integrated to produce a rich analysis of the qualitative data.

On the other hand, there were some limitations which included that most participants did not specify whether they were residents in England, Scotland, Wales, or Northern Ireland, as this could have better informed how to target interventions to UK residents. Additionally, our participants' ages ranged from 18 to 55 years; however, most participants were below age 30 years. Therefore, possibilities are that if this study was conducted on an older population, the results could vary since a meta-analysis documented that age differences can influence peoples' coping strategies during stress encounter (Prati & Pietrantonio, 2009). These limitations, therefore, generate multiple hypotheses that can benefit future research.

Conclusion and Further Research

This research concluded that the COVID-19 pandemic has adversely affected individuals in the UK; as a result, the individuals are employing positive and maladaptive coping strategies as a way to cope with the pandemic. Further research, is, therefore, needed to support the employment of positive coping strategies among individuals in countries affected by the pandemic. Finally, the current study may be replicated in underdeveloped countries that were hit by the pandemic, as this would be a fruitful avenue for continuing research on COVID-19 pandemic coping.

Acknowledgements We sincerely acknowledge Amarachi Ogueji for her efforts in data collection, the experts that validated our analysis, and the professors that granted us ethical consent. We also acknowledge all participants for their willingness to participate in this study.

Authors' Contributions OIA - Conceptualization, design, data collection/analyses, article writing (draft & original), and proofreading and approval of final manuscript.

OMM - Conceptualization, design, data collection/analyses, article writing (draft & original), and proofreading and approval of final manuscript.

DCBM - Conceptualization, design, data collection/analyses, article writing (draft & original), and proofreading and approval of final manuscript.

Data Availability The data that supports this study is available from the corresponding author upon reasonable request.

Compliance with Ethical Standards

Conflict of Interest The authors have no conflict of interest to declare.

Ethical Considerations All procedures performed in this research involving human participants were in accordance with the ethical standards of the British Psychological Society (BPS), and the Helsinki 1964 ethical declaration, its higher standard, or a comparable standard. An online consent form was used to obtain consent from participants, and all participants consented that their data should be used for this research.

Appendix

Table 1 Demographic characteristics of participants

Variable	N
Gender	
Male	15
Female	35
Highest Education Completed	
High school	6
Higher education	44
Ethnicity	
White British	20
Black/Black British	10
Asian/Asian British	9
Other	11

References

- Adejumo, A. O., & Olorunesan, A. T. (2018). Ethical issues in clinical psychology research in Nigeria and coping techniques. *British Journal of Psychology Research*, 6(2), 47–62.
- Booth, A., Hannes, K., Harden, A., Noyes, J., Harris, J., & Tong, A. (2014). COREQ (consolidated criteria for reporting qualitative studies). In D. Moher, D. G. Altman, K. F. Schulz, I. Simera, & E. Wager (Eds.), *Guidelines for reporting health research: A user's manual* (pp. 214–226). Oxford: Wiley.
- Cook, R. L., Cook, C. L., Karki, M., Weber, K. M., Thoma, K. A., Loy, C. M., Goparaju, L., & Rahim-Williams, B. (2016). Perceived benefits and negative consequences of alcohol consumption in women living with HIV: A qualitative study. *BMC Public Health*, 16(263), 1–8. <https://doi.org/10.1186/s12889-016-2928-x>.
- Elliott, R., & Timulak, L. (2005). Descriptive and interpretive approaches to qualitative research. In J. Miles & P. Gilbert (Eds.), *A handbook of research methods for clinical and health psychology* (pp. 147–159). Oxford: Oxford University Press.
- Hajian, S., Mehrabi, E., Simbar, M., & Houshyari, M. (2017). Coping strategies and experiences in women with a primary breast cancer diagnosis. *Asian Pacific Journal of Cancer Prevention : APJCP*, 18(1), 215–224. <https://doi.org/10.22034/APJCP.2017.18.1.215>.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Berlin: Springer Publishing Company.

- Liang, J., Kõlves, K., Lew, B., De Leo, D., Yuan, L., Talib, M. A., & Jia, C. X. (2020). Coping strategies and suicidality: A cross-sectional study from China. *Frontiers in Psychiatry, 11*, 129. <https://doi.org/10.3389/fpsy.2020.00129>.
- Marjanovic, Z., Greenglass, E. R., & Coffey, S. (2007). The relevance of psychosocial variables and working conditions in predicting nurses' coping strategies during the SARS crisis: An online questionnaire survey. *International Journal of Nursing Studies, 44*(6), 991–998. <https://doi.org/10.1016/j.ijnurstu.2006.02.012>.
- Nicomedes, C. J., Avila, R. M., Arpia, H. M. (2020). The lived experiences of Filipino front liners during COVID-19 outbreak. https://www.researchgate.net/publication/340444633_The_Lived_Experiences_of_Filipino_Front_Liners_During_COVID-19_Outbreak.
- Ogueji, A. I., & Okoloba, M. M. (2020). Compassion-focused therapy (CFT) as an intervention against suicidal ideation in newly diagnosed people living with HIV/AIDS (PLWHA) attending a Nigerian maternity teaching hospital. *Global Psychiatry, 3*(1), 104–112. <https://doi.org/10.2478/gp-2020-0012>.
- Ogueji, A. I., & Olley, O. B. (2019). Psychological capital, burden of care and demographic variables as predictors of psychological wellbeing among needy single parents in Lagos, Nigeria. *International Journal of Health Sciences, 7*(2), 93–101. <https://doi.org/10.13140/RG.2.2.20352.99844>.
- Okoloba, M. M., Ogueji, I. A., Darroch, S. J., & Ogueji, A. M. (2020). A multinational pilot study on the lived experiences and mental health impacts from the COVID-19 pandemic. *Global Psychiatry, 1*-(ahead-of-print). <https://doi.org/10.2478/gp-2020-0015>.
- Olaseni, A. O., Akinsola, O. S., Agberotimi, S. F., & Oguntayo, R. (2020). Psychological distress experiences of Nigerians during Covid-19 pandemic; the gender difference. *Social Sciences & Humanities Open, 2*(1), 100052. <https://doi.org/10.31730/osf.io/cu2h3>.
- Phua, D. H., Tang, H. K., & Tham, K. Y. (2005). Coping responses of emergency physicians and nurses to the 2003 severe acute respiratory syndrome outbreak. *Academic Emergency Medicine, 12*(4), 322–328. <https://doi.org/10.1197/j.aem.2004.11.015>.
- Prati, G., & Pietrantonio, L. (2009). Optimism, social support, and coping strategies as factors contributing to posttraumatic growth: A meta-analysis. *Journal of Loss and Trauma, 14*(5), 364–388. <https://doi.org/10.1080/15325020902724271>.
- Sim, K., Chan, Y. H., Chong, P. N., Chua, H. C., & Soon, S. W. (2010). Psychosocial and coping responses within the community health care setting towards a national outbreak of an infectious disease. *Journal of Psychosomatic Research, 68*(2), 195–202. <https://doi.org/10.1016/j.jpsychores.2009.04.004>.
- Sun, N., Wei, L., Shi, S., Jiao, D., Song, R., Ma, L., ... & Liu, S. (2020). A qualitative study on the psychological experience of caregivers of COVID-19 patients. *American Journal of Infection Control, 48*(6), 592–598. <https://doi.org/10.1016/j.ajic.2020.03.018>.
- Van Der Zwan, J. E., De Vente, W., Huizink, A. C., Bögels, S. M., & De Bruin, E. I. (2015). Physical activity, mindfulness meditation, or heart rate variability biofeedback for stress reduction: A randomized controlled trial. *Applied Psychophysiology and Biofeedback, 40*(4), 257–268. <https://doi.org/10.1007/s10484-015-9293-x>.
- Williams, S. N., Armitage, C. J., Tampe, T., et al. (2020). Public perceptions and experiences of social distancing and social isolation during the COVID-19 pandemic: A UK based focus group study. *BMJ Open, 10*, e039334. <https://doi.org/10.1136/bmjopen-2020-039334>.
- World Health Organization (2020). Coronavirus disease 2019 (COVID-19): Situation report, 82.
- Xiang, Y. T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., & Ng, C. H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *The Lancet Psychiatry, 7*(3), 228–229. [https://doi.org/10.1016/S2215-0366\(20\)30046-8](https://doi.org/10.1016/S2215-0366(20)30046-8).
- Yeung, D. Y., & Fung, H. H. (2007). Age differences in coping and emotional responses toward SARS: A longitudinal study of Hong Kong Chinese. *Aging & Mental Health, 11*(5), 579–587. <https://doi.org/10.1080/13607860601086355>.
- Zhang, Y., & Ma, Z. F. (2020). Impact of the COVID-19 pandemic on mental health and quality of life among local residents in Liaoning province, China: A cross-sectional study. *International Journal of Environmental Research and Public Health, 17*(7), 2381. <https://doi.org/10.3390/ijerph17072381>.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.