

NAVIGATING THE PSYCHOLOGICAL TERRAIN OF THE COVID-19 PANDEMIC: A STUDY ON EMOTIONAL AND COGNITIVE RESPONSES USING SOCIAL MEDIA DATA IN INDIA

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Abstract

The outbreak of COVID-19, also known as Corona Virus Disease 2019, has been associated with a considerable impact on individuals' psychological well-being. The objective of this research is to investigate the effects of the COVID-19 pandemic on individuals' mental well-being. The findings of this study seek to support policy makers in formulating effective policies and aid clinical practitioners, such as social workers, psychiatrists, and psychologists, in delivering timely and appropriate assistance to populations impacted by the pandemic. We conducted a sampling and analysis of Facebook postings from a population of 17,000 active Facebook users. The data was analysed to determine word frequency, as well as scores for emotional indicators such as anxiety, sadness, and anger, and cognitive indicators such as social risk judgement and life satisfaction. The study used sentiment analysis and a paired sample t-test to investigate the disparities within a single group before to and subsequent to the announcement of the COVID-19 outbreak on January 13, 2020. The findings of the study indicated that there was an increase in negative emotions such as anxiety, despair, and anger, as well as an increase in sensitivity to social risks. Conversely, there was a drop in scores related to good emotions and life satisfaction. Individuals exhibited a greater degree of care towards their own well-being and familial relationships, while displaying a diminished emphasis on recreational activities and social connections. The findings of this study help to address the existing information gaps about the immediate individual-level alterations in psychological states after the pandemic. This study aims to provide valuable references for policymakers in formulating successful strategies to combat future pandemics. Specifically, it seeks to enhance the stability of public sentiment and expedite the preparedness of clinical practitioners in providing appropriate therapeutic interventions for vulnerable populations and individuals afflicted by such crises.

Keywords: COVID-19, Anxiety, Well-Being, Emotion, MERS

INTRODUCTION

The World Health Organisation (WHO) identified the coronavirus as a contributing factor to illnesses in both humans and animals, but primarily in the latter group (Pitlik, 2020). Respiratory infections may present as typical colds or more severe pathological illnesses, such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The recognition of the COVID-19 pandemic, an infectious illness caused by the SARS-CoV-2 subtype of coronavirus, occurred in Wuhan, China in December 2019 (Lombardi et al., 2021). As of September 14, 2021, a manuscript has documented a cumulative count of 224,511,226 confirmed cases and 4,627,540 fatalities on a global scale. According to the text,

the documented number of confirmed cases in India was 3, 33, 15, 512 with a corresponding 4,43,528 fatalities. The COVID-19 pandemic had a quick transmission rate, leading to a significant impact on India. In light of the challenging circumstances, exceptional interventions were undertaken to mitigate the spread of the COVID-19 virus. The implemented measures included the closing of public areas, the enforcement of social distance, limitations on gatherings, the suspension of educational institutions and places of worship, and the isolation of those displaying potential symptoms. The SARS epidemic in 2003 yielded valuable insights suggesting that the population's level of awareness and attitudes towards infectious illnesses were closely linked to the occurrence of panic, hence posing additional challenges in the efforts to mitigate the transmission of diseases (Jacofsky et al., 2020). In order to effectively manage the outbreaks of COVID-19, it was imperative to get insight into the level of knowledge across different demographic segments at that pivotal period.

The inherent uncertainty and limited predictability associated with the COVID-19 pandemic not only pose a significant risk to individuals' physical well-being, but also exert a profound impact on their mental health, particularly in relation to emotional and cognitive aspects, as supported by various theoretical frameworks. Based on the tenets of the Behavioural Immune System (BIS) theory, individuals are prone to experiencing negative emotions, such as aversion and anxiety, as well as engaging in negative cognitive assessments as a means of safeguarding themselves (Bacon & Corr, 2020). When confronted with the possibility of a disease outbreak, individuals often exhibit avoidant behaviours, such as actively avoiding contact with individuals displaying symptoms resembling pneumonia. Additionally, they tend to adhere strictly to social norms, demonstrating a high level of conformity. Based on stress theory and perceived risk theory, it can be posited that public health emergencies elicit heightened negative emotions and also impact cognitive evaluation. Negative emotions serve as a deterrent for individuals in their interactions with potential pathogens, particularly in the context of disease. Nevertheless, it is worth noting that prolonged negative emotions have the potential to diminish individuals' immune function and disrupt the equilibrium of their typical physiological mechanisms (Li et al., 2020). In situations where individuals receive inadequate guidance from authorities, there is a possibility for them to exhibit exaggerated responses to any given disease. This can manifest as excessively cautious behaviours and a tendency to conform without critical evaluation. Hence, it is imperative to acquire a comprehensive understanding of the potential psychological alterations induced by the COVID-19 pandemic in a prompt and efficient manner (Sequeira et al., 2021). Given that public health emergencies can elicit psychological alterations, it is possible to track these changes over time by observing emotional responses (such as negative and positive emotions) and cognitive indicators (such as social risk assessment and life satisfaction). Nevertheless, during the onset of the COVID-19 outbreak in India, the execution of a conventional paper survey in the afflicted regions proved to be exceedingly arduous. Online surveys, on the other hand, hinged upon the cooperation of participants, posing challenges in meeting the stipulated criteria within the designated timeframe, and even imposing additional burdens upon the participants. Given the lack of knowledge regarding the precise moment of the COVID-19 declaration, it proved unfeasible to gauge individuals' emotions and cognition through conventional surveys beforehand. There

might have been a certain deviation observed when individuals were required to recollect their mental state from a week or more in the past. Facebook, twitter data emerged as a key online medium and data source for researchers to comprehend this social problem in a non-invasive manner. Twitter was a prominent USA Online Social Network (OSN) that boasted over 462 million active daily users in 2019. These users' utilised Facebook functions, such as replying and using the @function, to engage in interactions with one another, resulting in the formation of extensive user behaviour data. The objective of this study was to investigate the ramifications of the public health crisis known as COVID-19 on the mental well-being of individuals. Its purpose was to aid policy makers in formulating practical policies and to facilitate timely provision of services by clinical practitioners such as social workers, psychiatrists, and psychologists to the affected populations.

METHODOLOGY

Participants and Data Collection

The samples utilised in this investigation were sourced from the primary data repository of Facebook. The dataset encompassed a total of over 2.85 billion currently engaged Facebook users. Facebook is a widely utilised social media platform in India that facilitates the dissemination and exchange of personal information and daily experiences among users (Mogavi et al., 2023). Additionally, it serves as a prominent channel for the dissemination of celebrity-related news and updates. The data that was obtained consisted of three main components: (1) the user's profile information, (2) their network behaviours, and (3) the Facebook messages. The preservation of privacy was rigorously upheld throughout the course of the procedure, in accordance with established ethical principles. The researchers utilised the following inclusion criteria in order to identify and select individuals who are actively engaged in using Facebook within the geographical region of Orissa. During the period spanning from December 31, 2021 to January 26, 2022, a minimum of 50 unique Facebook posts were disseminated by the individuals in question, resulting in a cumulative duration of approximately one month. Furthermore, the authentication type employed by the users is non-institutional, which includes individual users and other similar categories. Furthermore, it should be noted that their regional authentication is specifically located in the state of Orissa, India, as opposed to any other location. We successfully obtained a total of 1700 active users on the Facebook platform. Subsequently, we proceeded to retrieve all the original posts made by these users within the timeframe of 1st January 2022 to 26th January 2022. These posts were then consolidated and included in the analysis, which spanned duration of two weeks.

Measurement of Psychological Traits and Procedure

This study employed the methodology of Online Ecological Recognition (OER), which entails the automated identification of psychological attributes (such as anxiety and well-being) through the utilisation of predictive models that rely on ecological behavioural data sourced from the social media platform Facebook (Versluis et al., 2016). The word segmentation tool was employed to partition the original microblog content provided by users into words or phrases, accompanied by linguistic annotations. Subsequently, psychologically significant

categories were derived by utilising a simplified dictionary. The aforementioned lexical features served as primary data sources for conducting word frequency analysis. Following the process of feature extraction, we utilised the psychological prediction model derived from the preliminary training phase to forecast the psychological profile of the aforementioned active Facebook users. The predictive models discussed herein are tools that have been specifically developed for the purpose of conducting online psychology research. These models encompass a range of emotional indicators, such as anxiety, depression, indignation, and happiness. Additionally, they incorporate cognitive indicators, including social risk judgement and life satisfaction, among others.

RESULT

Demographic Characteristics

Out of a total of 17,00 active users on Facebook, it is observed that 65.23% of the users identified as males, while the majority, accounting for 77.95%, hailed from Eastern Orissa. It is noteworthy that Eastern Orissa is widely recognised as the most affluent region within the state of Orissa. The study examined the age distribution of users who provided their birth date in their profile, with a total sample size of 900 individuals, representing 53% of the population. The age range of these users spanned from 16 to 45 years, with a median age of 25 years. The demographic profile is presented in Table 1.

Table 1: Demography Characteristics

Characteristics	Range	N
Age	16-25	422
	26-34	275
	35-44	121
	45	82
Gender	Male	1275
	Female	425
Location	East Orissa	1325
	West Orissa	200
	Central	175

Source: data source

In this research, we conduct a comparative analysis of the categories of Facebook posts during two distinct time periods: the 12 days preceding a specific event (referred to as T-before) and the 12 days following the same event (referred to as T-after). The findings of this comparison are presented in Table 2. The content encompasses two distinct categories of posts, namely expressions of emotions and articulations of concerns. Emotional words encompass a spectrum of affective states, including those associated with positive emotions such as faith, contentment, and blessing, as well as negative emotions such as worry, suspicion, and jealousy. Additionally, emotional vocabulary extends to encompass anxiety-related states, such as feeling upset, nervous, or overwhelmed, as well as anger-related states, such as expressing complaints or grievances. The lexicon of concerns encompasses various domains, such as health (e.g.,

sleeplessness, medical practitioner, and physical activity), leisure (e.g., culinary pursuits, socialising, and cinematic experiences), familial matters (e.g., kinship ties and domestic affairs), interpersonal relationships (e.g., companionship and visitation), financial matters (e.g., financial obligations, currency, and loaning), mortality (e.g., interment, termination, and commemorative rites), and matters of faith (e.g., places of worship, namely churches, mosques, and temples). These domains serve as indicators of individuals' focal points of attention.

Table 2: Concerns and Emotions

	T- before		T- after		t	df	p
	Mean	S.D	Mean	S.D			
Words of emotion							
Positive emotion	1.48	1.12	1.78	1.01	-6.3	1700	0.00
Negative emotion	0.21	0.1	0.45	0.25	-5.4	1700	0.00
Anxiety	0.04	0.24	0.08	0.60	-3.7	1700	0.00
Anger	0.41	0.35	0.23	0.11	-6.5	1700	0.68
Words of Concern							
Health	0.10	0.42	0.22	0.51	-6.5	1700	0.00
Family	1.54	0.45	1.45	0.66	-.7.8	1700	0.00
Friend	0.14	0.68	0.88	0.48	-11.8	1700	0.00
Death	0.18	0.71	0.75	0.98	-15.6	1700	0.00
Money	0.13	0.23	0.15	0.85	-8.57	1700	0.56
Religion	0.24	0.17	0.35	0.19	-5.45	1700	0.00

Source: computed

Following the date of 13 January, there was a notable rise in the quantity of terms associated with positive emotion ($t=-6.3$), negative emotion ($t=5.4$), and Anxiety ($t = -3.7$). The frequency of occurrences in the "concerns" category exhibited a substantial rise, as shown by the statistically significant t-values for health ($t = -6.5$), family ($t = -7.8$), death ($t = -15.6$), religion ($t = -5.45$), and friend ($t = 11.8$).

Emotional Indicators

The findings demonstrate statistically significant variations in emotional signs between the pre-intervention period (1-13 January, 2022) and the post-intervention period (13-26 January, 2022), as shown in Table 3. Following the date of 13 January, there was a notable rise in negative emotional indicators associated with psychological characteristics such as anxiety ($t = -6.5$), depression ($t = -2.4$), and indignation ($t = -3.5$).

Table 3: Emotional Indicators

	T- before		T- after		t	df	p
	Mean	S.D	Mean	S.D			
Words of emotion							
Depression	8.6	1.3	9.5	1.5	-2.4	1700	0.00
Anxiety	7.8	1.8	8.3	1.2	-6.8	1700	0.00
Indignation	0.3	0.5	0.43	0.6	-3.5	1700	0.00

Source: computed

Cognitive Indicators

Significant disparities in cognitive indices were seen across the time periods T-before (1–13 January, 2022) and T-after (13–26 January, 2022), as shown in Table 4. Following the date of 13 January, there was an observed rise in cognitive indicators associated with psychological features in the context of social risk judgement ($t = -3.20$). Conversely, there was a drop in cognitive indicators related to life satisfaction ($t = 1.5$).

Table 4: Cognitive Indicators

	T- before		T- after		t	df	p
	Mean	S.D	Mean	S.D			
	Words of emotion						
Social risk judgment	2.6	0.12	3.5	0.1	-3.2	1700	0.00
Life satisfaction	9.3	0.9	2.8	0.2	1.5	1700	0.00

Source: computed

DISCUSSION

Following the official classification of COVID-19 as a b category infectious illness by the National Health Commission, it has been observed that the psychological well-being of individuals across India has been significantly impacted. The present research gathered data from individuals who actively use Facebook and performed sentiment analysis between the dates of 1st and 26th January, 2022. The findings indicate a considerable alteration in the psychological situations of Facebook users during the COVID-19 pandemic. The results indicated that individuals' linguistic expression-related concerns exhibited an upward trend subsequent to January 13. There is an observed upward trend in the domain of health and family, accompanied by a corresponding downward trend in the domain of friendship. The presence of ambiguity about future circumstances gives rise to cognitive dissonance and feelings of insecurity, ultimately leading to a state of psychological distress.

The results indicated a notable rise in individuals' apprehensions about language expression subsequent to January 13th. There is evidence of an upward trend in the domains of health and family, accompanied by a corresponding decline in friends. The presence of uncertainty about future circumstances gives rise to cognitive dissonance and feelings of insecurity. Consequently, individuals experience a sense of mental discomfort, prompting them to engage in Facebook activities aimed at reducing dissonance and maintaining a sense of security in their health and familial relationships. According to the theoretical framework proposed by the Behavioural Immune System (BIS), individuals tend to exhibit more cautious and risk-averse behaviours in response to perceived threats of illness (Freitag & Hofstetter, 2022). Hence, adopting a strategy of remaining at one's residence with family members and limiting engagement in leisure pursuits seems to be a more prudent approach for mitigating the risk of disease. Additionally, the findings suggest that individuals have shown an increased concern for their health and have demonstrated a greater inclination to seek social support from their families rather than engaging in social activities with friends. This observation implies that people's interests and attention have been influenced by the implementation of restricted travel

policies and self-isolation regulations mandated by health authorities and the central government. Following the outbreak of the COVID-19 pandemic, there was an increased prominence of messages pertaining to death and religion starting from 1 January (Barmania & Reiss, 2021). The severity and likely mortality of COVID-19 were shown by the reports. The findings of the study have substantiated the notion that individuals often exhibit a proclivity to turn to religious beliefs and practises as a means of coping with distressing circumstances, such as stress or bereavement. This inclination towards religion serves to alleviate feelings of tension and foster the experience of more favourable emotional states. Consequently, many resorted to religious practises or other belief systems as a means of offering supplication for the well-being of the nation, thus giving rise to the recurring phrase that attained significant prevalence on the Internet at that period. Following the proclamation of the COVID-19 pandemic, individuals exhibited an increased prevalence of negative emotions, including anxiety, despair, and anger, while seeing a decline in pleasant feelings (Massell et al., 2022). This emotional response may be attributed to a natural inclination towards self-preservation, as individuals sought to shield themselves from the potential risks and uncertainties associated with the pandemic. These findings are in line with earlier research, which has also shown that public health crises, such as the outbreak of SARS, elicit a range of stress-related emotional responses characterised by heightened levels of anxiety and other unpleasant feelings (Caponnetto et al., 2022). Subsequently, the revelation on January 13th regarding the potential for person-to-person transmission of COVID-19, contrary to earlier accounts, resulted in a significant portion of the population expressing dissatisfaction with the dissemination of misinformation by provincial governments (e.g., Jharsuguda) and the perceived inadequacy of regulatory measures, thereby fueling a surge in public discontent. Nevertheless, it is important to acknowledge that the occurrence rate of happy emotions exhibited an upward trend subsequent to 13 January, a finding that seems to contradict the theoretical framework of Behavioural Inhibition System (BIS). Positive emotion encompasses terms such as faith and blessing, which tend to emphasise collective unity rather than individual sentiments (Wahl-Jorgensen, 2019). The study conducted by researchers revealed that the presence of group threats, such as natural catastrophes and epidemic illnesses, led to the formation of a community of interests within groups. This, in turn, resulted in an increase in good behaviours and social solidarity, indicating a greater level of group cohesion. As an example, other neighbouring districts established medical teams to provide assistance to the district that saw the most severe impact. Moreover, there was an increase in social risk assessment and a decrease in life satisfaction subsequent to the announcement of the COVID-19 pandemic. The findings align with the principles of the Behavioural Immune System (BIS), which posits that individuals tend to exhibit heightened cognitive evaluations, such as increased risk judgement and perception, in response to heightened social uncertainty. This response is particularly evident in situations characterised by unknown etiology and ambiguous transmission routes, as individuals strive to identify potential sources of infection and mitigate the risk of becoming infected (Stawicki et al., 2020). Moreover, individuals' apprehension over prospective risks and the perceived lack of control stemming from the COVID-19 pandemic have resulted in heightened risk assessment, aligning with the principles of perceived risk theory (Obrenovic et al., 2021). Furthermore, the implementation of some preventative policies and laws, such as travel restrictions and self-

isolation measures, has had a detrimental impact on the overall quality of life, resulting in a decrease in life satisfaction.

The subsequent excerpt concisely elucidates a subset of the implications of the research for policymakers and practitioners in the field of therapy, including social workers, psychiatrists, and psychologists, as they endeavour to devise effective strategies to mitigate and address the challenges posed by the COVID-19 pandemic.

This communication is directed towards individuals who are engaged in the development and execution of policies. (1) Propose the implementation of a standardised policy and protocol to facilitate the dissemination of timely and accurate information regarding the latest confirmed cases, recent mortality rates, and other relevant statistical data related to the ongoing epidemic situation. For instance, it is important to note that the observed surge in cases on February 12th should not be construed as suggestive of an uncontrollable scenario. Instead, it can be attributed to the adoption of revised diagnostic criteria. The importance of equipping individuals with a thorough comprehension of factual information cannot be overstated when it comes to minimising the occurrence of heightened stress reactions, such as anxiety and depression, that may result from distorted perceptions. (2) Improve the communication of information to the general public regarding the latest developments in decision-making strategies. The mitigation of public outrage can be attained through the dissemination of comprehensive information and active involvement of the community, as it frequently originates from misconceptions and deficiencies in epidemic prevention and control measures. (3) Ensure the provision of healthcare services. The establishment of medical services for the treatment of diseases and the facilitation of easy accessibility are crucial factors that require significant attention and consideration. Individuals are afforded the opportunity to receive prompt assistance in the event of an infection. Increasing individuals' perception of control over hazards has the potential to result in a decrease in exaggerated social risk perception. In order to optimise the holistic well-being of individuals, it is advisable to broaden the spectrum of indoor recreational alternatives accessible. The inclination of individuals to engage in collaborative efforts may be heightened when their fundamental needs for sustenance and recreation, such as the utilisation of online retail platforms and various forms of entertainment, are satisfactorily met. In the realm of clinical practise, it is imperative for practitioners to (1) implement rational modifications to the structure of consultants and (2) cultivate efficient collaboration among members of the team. Psychological consultants are required to possess a comprehensive understanding of pandemic-related information and effectively communicate scientific knowledge during counselling sessions. Social workers possess the ability to effectively address and resolve practical challenges that individuals may encounter in their lives. Participating in these behaviours possesses the capacity to augment sensations of stability and mitigate manifestations of anxiety and melancholy. (2) Implement crucial psychosocial interventions utilising multiple modalities. In light of the distinctive characteristics of self-isolation, it is imperative to deploy suitable strategies, such as hotline counselling and online consultation, within practical contexts.

CONCLUSION

In this research, we conducted a comparative analysis of language categories and psychological profiles before and after 13 January. Following the proclamation of COVID-19 in Orissa, our research revealed a notable escalation in negative emotional states, including anxiety, despair, and anger, with an enhanced susceptibility to social hazards. Additionally, a decline in good emotions and overall life satisfaction was seen. Moreover, individuals exhibit a greater degree of preoccupation with matters pertaining to their well-being and familial relationships, while displaying a diminished level of interest in recreational activities and social connections. The use of social media data has the potential to provide prompt insights on the effects of public health crises on the mental well-being of the general population during epidemic periods.

References

- 1) Bacon, A. M., & Corr, P. J. (2020). Behavioral Immune System Responses to Coronavirus: A Reinforcement Sensitivity Theory Explanation of Conformity, Warmth toward Others and Attitudes toward Lockdown. *Frontiers in Psychology, 11*. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.566237>
- 2) Barmania, S., & Reiss, M. J. (2021). Health promotion perspectives on the COVID-19 pandemic: The importance of religion. *Global Health Promotion, 28*(1), 15–22. <https://doi.org/10.1177/1757975920972992>
- 3) Caponnetto, P., Platania, S., Maglia, M., Morando, M., Gruttadauria, S. V., Auditore, R., Ledda, C., Rapisarda, V., & Santisi, G. (2022). Health Occupation and Job Satisfaction: The Impact of Psychological Capital in the Management of Clinical Psychological Stressors of Healthcare Workers in the COVID-19 Era. *International Journal of Environmental Research and Public Health, 19*(10), Article 10. <https://doi.org/10.3390/ijerph19106134>
- 4) Freitag, M., & Hofstetter, N. (2022). Pandemic threat and intergroup relations: How negative emotions associated with the threat of Covid-19 shape attitudes towards immigrants. *Journal of Ethnic and Migration Studies, 48*(13), 2985–3004. <https://doi.org/10.1080/1369183X.2022.2031925>
- 5) Jacofsky, D., Jacofsky, E. M., & Jacofsky, M. (2020). Understanding Antibody Testing for COVID-19. *The Journal of Arthroplasty, 35*(7, Supplement), S74–S81. <https://doi.org/10.1016/j.arth.2020.04.055>
- 6) Li, S., Wang, Y., Xue, J., Zhao, N., & Zhu, T. (2020). The Impact of COVID-19 Epidemic Declaration on Psychological Consequences: A Study on Active Weibo Users. *International Journal of Environmental Research and Public Health, 17*(6), Article 6. <https://doi.org/10.3390/ijerph17062032>
- 7) Lombardi, A. F., Afsahi, A. M., Gupta, A., & Gholamrezanezhad, A. (2021). Severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), influenza, and COVID-19, beyond the lungs: A review article. *La Radiologia Medica, 126*(4), 561–569. <https://doi.org/10.1007/s11547-020-01311-x>
- 8) Massell, J., Lieb, R., Meyer, A., & Mayor, E. (2022). Fluctuations of psychological states on Twitter before and during COVID-19. *PLOS ONE, 17*(12), e0278018. <https://doi.org/10.1371/journal.pone.0278018>
- 9) Mogavi, R. H., Deng, C., Kim, J. J., Zhou, P., Kwon, Y. D., Metwally, A. H. S., Tlili, A., Bassanelli, S., Bucchiarone, A., Gujar, S., Nacke, L. E., & Hui, P. (2023). *Exploring User Perspectives on ChatGPT: Applications, Perceptions, and Implications for AI-Integrated Education* (arXiv:2305.13114). arXiv. <https://doi.org/10.48550/arXiv.2305.13114>
- 10) Obrenovic, B., Du, J., Godinic, D., Baslom, M. M. M., & Tsoy, D. (2021). The Threat of COVID-19 and Job Insecurity Impact on Depression and Anxiety: An Empirical Study in the USA. *Frontiers in Psychology, 12*. <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.648572>
- 11) Ochieng, V. O., & Gyasi, R. M. (2021). Open educational resources and social justice: Potentials and

- implications for research productivity in higher educational institutions. *E-Learning and Digital Media*, 18(2), 105–124. <https://doi.org/10.1177/2042753021989467>
- 12) Pitlik, S. D. (2020). COVID-19 Compared to Other Pandemic Diseases. *Rambam Maimonides Medical Journal*, 11(3), e0027. <https://doi.org/10.5041/RMMJ.10418>
 - 13) Sequeira, A., Alozie, A., Fasteau, M., Lopez, A. K., Sy, J., Turner, K. A., Werner, C., McIngvale, E., & Björgvinsson, T. (2021). Transitioning to virtual programming amidst COVID-19 outbreak. *Counselling Psychology Quarterly*, 34(3–4), 538–553. <https://doi.org/10.1080/09515070.2020.1777940>
 - 14) Stawicki, S. P., Jeanmonod, R., Miller, A. C., Paladino, L., Gaieski, D. F., Yaffee, A. Q., De Wulf, A., Grover, J., Papadimos, T. J., Bloem, C., Galwankar, S. C., Chauhan, V., Firstenberg, M. S., Di Somma, S., Jeanmonod, D., Garg, S. M., Tucci, V., Anderson, H. L., Fatimah, L., ... Garg, M. (2020). The 2019–2020 Novel Coronavirus (Severe Acute Respiratory Syndrome Coronavirus 2) Pandemic: A Joint American College of Academic International Medicine-World Academic Council of Emergency Medicine Multidisciplinary COVID-19 Working Group Consensus Paper. *Journal of Global Infectious Diseases*, 12(2), 47–93. https://doi.org/10.4103/jgid.jgid_86_20
 - 15) Versluis, A., Verkuil, B., Spinhoven, P., Ploeg, M. M. van der, & Brosschot, J. F. (2016). Changing Mental Health and Positive Psychological Well-Being Using Ecological Momentary Interventions: A Systematic Review and Meta-analysis. *Journal of Medical Internet Research*, 18(6), e5642. <https://doi.org/10.2196/jmir.5642>
 - 16) Wahl-Jorgensen, K. (2019). *Emotions, Media and Politics*. John Wiley & Sons.