

Original Article

Sociological and psychological perspective on spread of COVID 19 Virus: A study on philosophical paradigms

V. K. Kurukulaarachchi¹, H. A. Siriwardhana², J. P. Wesley³

¹ Faculty of Humanities & Education, CINEC Campus

² ESOF Metro Campus

³ University of Peradeniya.

veronica.kurkulaarachchi@cinec.edu

Abstract

Sociological and psychological perspectives shape and tune the behaviors of individuals. The Philosophical assumptions integrated in these perspectives are highlighted to be key underlying bases to which determine the reality social sciences. Therefore, having a close concentration on Sociological and psychological perspectives on the spread of the COVID-19 Virus through a philosophical standpoint would allow a deeper notion to realize core of the virus spread. However, these philosophical assumptions are underrated within the research fields limiting it to academics. Further, analyzing into this world pandemic is required to realize the entangled outcomes. This paper discusses results of an archival study conducted through a systematic review of literature. A series of ontological and epistemological reveals of social sciences within the sociological and psychological perspectives related to the spread of the COVID-19 virus is stated. A key reveal is that both sociological and psychological research paradigms are balanced within both interpretive and realist studies. However, a tendency towards scoping the research within natural sciences was visible. Which is identified as the requirement of statistical data to justify into socially constructed phenomena howsoever through a technical-rational stance within the society. It was revealed that the citizens feel apathetic on quantified findings as the psychological findings weren't interpreted in simple language. This answered the low number of psychology-based research in comparison to multi-tiered sociological studies. Therefore, the study is concluded encouraging the readers to understand the importance of philosophical paradigms of research in realizing the spread of the COVID-19 virus.

Keywords: *Philosophical assumption, Philosophical paradigm, Ontology, Epistemology, and Axiology*

Introduction

In 1837 French philosopher Auguste Comte first coined the word sociology. Sociology is the application of a scientific approach when studying the relationship between the society and individual [1]. Sociology is the study of society and consist of human social interactions, rules and regulations, guidelines and processes that connect distinct individuals, not only as a person, but as members of institutes, groups, and organizations. Sociology can be identified as a branch of social sciences and this broad discipline focus on social stratification, social interaction, social relations, culture, and nonconformity. Further sociology as systematic study, approaches sociology which includes both qualitative and quantitative research methods [1]. Furthering the studies of sociology, coincided perspective which is naturally intertwined is the psychological perspective of behavior. According to the American Psychological Association, Psychology is the scientific study of the mind and behavior and it is a multilayered discipline comprising many arenas of studies, namely human development, sports, health, clinical, social behavior and cognitive processes [2]. According to the philosophical point of view, the great philosophers namely Socrates (470 BC – 399 BC) Plato (428/427 BC – 348/347 BC), Aristotle (384 BC - 322 BC) have debated about themes in modern psychology for instance memory, freedom against determinism, nature against nurture, attraction etc. When Psychology evolves as a discipline, structuralism and functionalism were the two central theoretical perspectives as they discussed in the way which a brain worked. Sigmund Freud (1856-1939) originated psychoanalysis which was a main paradigm in psychology all through the early twentieth century. According to Freud, individuals can be cured by making cognizant their oblivious contemplations and inspirations, consequently gaining understanding [2]. When one attempts to realize

the sociological and psychological perspectives on the spread of COVID-19 virus, it contemplates to identify the nature of the virus in detail.

The COVID-19 pandemic has increased to 331,347 by May 2020 [3] reaching worldwide to over 5 million infected cases. It has now emerged as a public health crisis, and morphed into a global economic crisis, with severe impacts on commercial activity, employment, and trade [4], identified as the world's greatest extinction being described beyond an epidemic. The outspread of the virus is best tested and studied through expert supervision and consultation which is fundamentally explored through its emergent core. When studies are carried on to understanding the spread of the virus in sociological and psychological perspectives based on philosophical standpoints, first revealing is that the societal and mental settings do make it difficult to continue living without ideas due to the main reason where the ideas tend to fold and create a way of life [5]. The idealization of underpinning the possibility of revealing analogy between the spread of the virus in parallel to the spread of the philosophical ideas through sociological and psychological perspectives in this process of sense making is important [6]. One may seem to think of the pandemic through the ability to be able to search the reality. With survival, one suffers the pandemic that threatens the. Existence and the very possibility of thinking about it. It is factual to state that all levels of the society do not suffer the spread of the pandemic in the same way. Two main highlights of the available multiple verities of perspectives spread of COVID-19 virus which consistently surface are the sociological and psychological perspectives of the individuals in the broader society. The execution of Socrates because of the threat of his ideas to the power structures of the society and the time which lead to excommunication from his demise [7] explains how similar, the spread of Corona virus and the philosophical underpinnings. Both enters orally and shifts the paradigms for eternal establishments. The fact-based reasoning is that the reality alone imposes ideas on individuals irrespective of the chosen arrangements. Even the simplest or the epidemical virus could mobilize and generate many ideas through philosophy [6] which seamlessly, rationalizes the reason to identifying the spread of Corona virus.

Philosophy if taken in isolation will provoke societies and exert fundamental changes in mentalities so that to mark its affects in history for better or for worse [6]. It can be identified as "search of truth" and derived from the two Greek words referred to as Philo and sophia meaning love and wisdom [8] which guides the believes and values of the thinking of the researchers [9]. Further philosophy can be way of truth or search in knowledge [10]. Research paradigm comprises of ontology, epistemology, human nature, axiology and methodology [9]. Research paradigms are established beliefs and assumptions within a research community about ontological, epistemological, and methodological concerns. Philosophy in social science research will pay a vital role in terms of its ontology, epistemology and methodology. "Ontology concerns the nature of 'reality' where epistemology "is concerned with the nature of knowledge - what forms it takes and how it can be obtained and transmitted [11]. Epistemology on the other hand can be identified as how to know what exists [12]. Furthermore, Epistemology is our belief about how one may come to know the world. During this context of the outbreak of the COVID-19 pandemic, philosophy can be better utilized through researching accurate philosophical assumptions to arrive at the most affective results expected. It aims to give a sense to reality [6]. To derive specific duties, directions, and guidelines to be practiced in the situations available through the rationalization of reflections when catering to available problems, the philosophical paradigms become crucial. Thus, in terms of understanding the spread of Corona virus, which is the crucial most issue in the world it certainly can be thematized with sociological and psychological perceptions which could provide philosophical reflections to reach accuracy in expected results.

Problem Statement

Sociological and psychological perspectives in understanding the philosophical paradigms in spread of Corona 19 Virus is crucial since the andemic has an appalling total effect. Sociological and psychological perspectives discuss the spread of Corona 19 Virus even though philosophical assumptions may be overlooked and often limited to academic purposes. Therefore, it is significant to understand how sociological and psychological

perspectives can be addressed through philosophical paradigms and which provide conceptual tools useful to those who make difficult decisions, in communicating and explaining the spread of COVID-19 virus. Research objective is addressed through the use of inductive approach with the collection of data by gathering peer reviewed journal articles. Through the exploration aimed to answer the question, the objective of the study approaches the philosophical paradigms in aforementioned two perspectives. Even though it is the practice to utilized philosophical paradigms only for academic purposes this research attempts to reach and alternative purview.

Research Question

How to identify the sociological and psychological perspectives of spread of COVID-19 Virus through philosophical paradigms?

Research Objective

To explore the sociological and psychological perspectives of spread of COVID- 19 Virus through philosophical paradigms.

Research Methodology

The study is conducted based on archival method using a systematic literature review. The articles selected in the study were chosen subjectively based on a rather socio-political perspective. In order to achieve the objective of the study, 18 articles were selected from a large data base available for review based on sociological and psychological perspectives on the spread of Covid -19 virus. When decided on the articles, consideration has given to peer reviewed research articles from Emerald Insight, SAGE, Elsevier, Science Direct and Springer Link Journals based on their online data bases. Articles were initially selected under the topic of spread of Covid 19 virus specifically relating to sociological and psychological perspectives and philosophical stances only. The search engines were penetrated with the key searches such as “Philosophical paradigms ‘AND’ COVID-19”, “Axiology”, “Epistemology”, “Ontology ‘OR’ spread of COVID-19”, “Positivism ‘AND’ spread of COVID-19”, “Interpretivism ‘AND’ spread of COVID-19”. The study was conducted using Boolean operators such as “AND”, “OR” in par with the two perspectives namely, Sociology and

Psychology. The key searches were then streamlined upon the most relevant content to the subjective research area and tabulated in Table 1 given below as the document analysis which was conducted for the study based on each perspective. As a second stage articles were reviewed using the theoretical and empirical information through analyzing the content. Thirdly, collated information interpreted significantly according to the sociological and psychological perspectives.

| Perspecti ve | Arti cle Cod e | Author | Name of the article |
|-----------------------------------------------|-------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Sociologi cal perspecti ve | SA1 | (Mehta, 2021) [13] | The Asian region and COVID-19: approaches and gaps in controlling the virus |
| | SA2 | (Sharma, 2020) [14] | Exploration of COVID-19 impact on the dimensions of food safety and security: a perspective of societal issues with relief measures |
| | SA3 | (Noor et al., 2020) [15] | Analysis of public reactions to the novel Coronavirus (COVID-19) outbreak on Twitter |
| | SA4 | (El Maarouf et al., 2020) [26] | COVID – 19: A Critical Ontology of the present |

| | | | | | | | |
|--|------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------|------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | SA5 | (Lourdes Velázquez, 2020) [6] | The role of philosophy in the pandemic era | Psychological perspective | SA11 | (Concepción-Zavaleta et al., 2020) [27] | Does level of education influence mortality of SARS-CoV-2 in a developing country? |
| | SA6 | (Raza, 2020) [18] | COVID-19: A Psychosocial Perspective | | SA12 | (Rattay et al., 2021) [28] | Differences in risk perception, knowledge and protective behaviour regarding COVID-19 by education level among women and men in Germany. Results from the COVID-19 Snapshot Monitoring (COSMO) study |
| | SA7 | (Aschwanden, et al., 2020) [19] | Psychological and behavioral responses to Coronavirus disease 2019: The role of personality | | | | |
| | SA8 | (Perera, Wickramarachchi, Samanmalie, & Hettiarachchi, Psychological experiences of healthcare professionals in Sri Lanka during COVID-19, 2021) [20] | Psychological experiences of healthcare professionals in Sri Lanka during COVID-19 | | | | |
| | SA9 | (Webber-Ritchey et al., 2021) [23] | COVID-19: Qualitative Research with Vulnerable Populations | | PA1 | (Sun et al., 2020) [22] | A qualitative study on the psychological experience of caregivers of COVID-19 patients |
| | SA10 | (Goldberg, 2021) [16] | Education in a Pandemic: The Disparate Impacts of COVID-19 on America's Students | | PA2 | (Sun et al., 2020) [24] | Qualitative study of the psychological experience of COVID-19 patients during hospitalization |

| | | | | |
|--|-----|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| | PA3 | (Radic et al., 2020) [25] | Fear and Trembling of Cruise Ship Employees: Psychological Effects of the COVID-19 Pandemic | analysis of longitudinal studies and natural experiments |
| | PA4 | (Wang et al., 2020) [17] | Review Article: Psychological Influence of Corona virus Disease 2019 (COVID-19) Pandemic on the General Public, Medical Workers, and Patients with Mental Disorders and its Countermeasures | |
| | PA5 | (Saladino et al., 2020) [21] | The Psychological and Social Impact of Covid-19: New Perspectives of Well-Being | |
| | PA6 | (Prati & Mancini, 2021) [29] | Review article: The psychological impact of COVID-19 pandemic lockdowns: a review and meta- | |

Source: Authors developed

Table I List of reviewed articles

Results And Discussion

The study discusses several thematic areas identified through an analysis of available contemporary resources on the philosophical assumptions behind the spread of COVID -19 virus. The analysis evolved based on the themes of Sociology and Psychology.

Sociological perspective

The philosopher’s task is not to find the meaning of life or to tell others how they should live but to provide conceptual tools useful to those who make difficult decisions, in communicating and explaining them to others [6]. Within the audit, there were five coordinate articles alluded to which were basically taking a relativist and interpretivist ontological assumption affirming the natural stance to which social sciences are philosophically evaluated with a heading of interpretivism which affirms that there can be multiple realities behind the spread of corona virus. The articles primarily have taken after the technique of archival research investigating shortlisted articles based on key words such as COVID-19, coronavirus, severe intense respiratory syndrome-like coronavirus (SARS-CoV-2), widespread, infection, isolate, etc. [13]. Examining the different roles of government, technology, business–government collaborations and topographical and demographical structures within the society. The studies support the sociological assumptions behind the spread of COVID-19 infection advocating a social constructivist epistemology.

Larger part of these inductive studies show work which are induced on the spread of COVID-19 virus, consequently, outlays the theoretical viewpoints of as it were the causes behind the spread. But these viewpoints depict the continuous scenario’s impacts, expanding its suggestion to the

individuals coming from the industry and the scholarly world background. There were assist investigate, which endeavored considering these sociological contexts on an objective based philosophical assumption with a realistic ontology. The subjective ontologist made decisions to imposed lockdown and curfew halted the various modes of transportation causing disruption in the food supply chain due to which commodities could not be delivered to the customer [14]. A highlight was an investigation of COVID-19 tweets conducted through VOS viewer looking at the responses of the individuals related to the COVID outbreak within the world examining the subjective opinions of the common open through a deterministic epistemology [15].

Highlighted inside the sociological viewpoint, a few instructive considers were essentially unmistakable on its philosophical presumptions. In this way, considered to be portrayed inside the study as a separate viewpoint. Among the inductive methodological headings, educational and literacy levels as major reasoning behind the spread of COVID-19 widespread has been investigated. The stress caused by the widespread on lesbian, cheerful, androgynous, transgender and strange (LGBTQ+) understudies in rudimentary and auxiliary schools of USA have confronted especially increased dangers for uneasiness and stretch and have misplaced normal get to confirming understudy organizations and steady peers, instructors, and school staff were moreover considered (Office of Instruction Office for Respectful Rights, 2021). In this paper, authors have discussed educational aspect under the sociological perspective as educational sociology is the branch of behavioral science which deals with social aspects of education [1]. Therefore, sociological approach to education impact on COVID 19 virus discussed under the sociological perspective.

Positivist examinations have affirmed that the ethnic and socioeconomic positions affecting the level of instruction expanded the spread of COVID-19 widespread. The experimental epistemologies generalize the hardship and low educational fulfillment were reliably related with a tall hazard of affirmed diseases [16]. Further, studies uncovered that more grounded affiliations were apparent with the level of instruction and the

spread of COVID-19 infection. These experimental, survey-based studies always legitimize the philosophical base and exactness in generalizing the discoveries such as highly educated male was profoundly dreadful of the widespread while less educated male respondents were more inclined to cause the spread of the infection [16].

Psychological perspective

Psychology ordinarily considers the root cause of human behaviour [17]. Hence, the analysts tend to generalize the discoveries through positivist analysts, be that as it may, in reaction to Covid and in terms of deciding the spread of COVID – 19 infections, the accessible assets were obvious from both inductive and deductive strategies. This gives evidence for a more adjusted and steady philosophical assumption spread over the research world inside the psychological viewpoints.

The psychological analyst in this way appears to be clearly distinguishing the spread of COVID-19 infection inside the viewpoint. Conceptual tools in deciding the relationship of religious beliefs, family [33] and parental education [18], social protections, mental wellbeing, life fulfillment, identity characteristics, mental and behavioral reactions [19], Epidemiologic, psychosocial and word related variables predictive of depression and anxiety [20] were considered employing a realistic ontology with an empirical epistemology while psychological well-being of the foremost exposed groups, counting children [34], college understudies, and wellbeing laborers, who are more likely to create post-traumatic push clutter, uneasiness, sadness, and other side effects of trouble [21] due to the COVID – 19 widespread were too considered utilizing positivist epistemological assumptions.

On the other hand, phenomenological ponders examining psychological perspectives of the spread of COVID-19 infection such as negative feelings, fatigue, inconvenience, weakness was caused by high-intensity work, fear and uneasiness [22], warmth and gratefulness, improvement of proficient duty, and self-reflection moreover showing positive feelings happened at the same time with negative feelings were too tested. Further, the significance of Subjective research methodology in bringing consideration to the lived

experience of others as they unfold [23] are tried comprehensively giving a more extensive scope of in depth understanding on the viewpoint in different think about groups and respondents such as psychological practices of COVID-19 caregivers [22] and COVID patients [24].

Sequential studies on in-depth investigation Firstly, testing attitudes such as fear, refusal, and disgrace, Besides, the major source of push on viral nature of the illness, isolate measures, and concerns with respect to the wellbeing of family individuals [31] , Secondly, responses of body and intellect specifically enthusiastic reactions, intemperate consideration to indications, rumination, and changes in count calories, rest, and behaviour [32] , Thirdly, the variables included mental alterations, therapeutic care, family and social background. Further long-lasting illnesses brought about in mental development and patients viewed issues with appreciation through cherishing of life, family, bravery, and relentlessness [25]. Radic et al., 2020 were unmistakably social examined with relativist ontologies and interpretivist epistemological assumptions.

Conclusion

The study conducted reviews key available research within the sociological and psychological perspectives of the spread of COVID-19 pandemic. Through the highlights of how philosophical standpoints shape and tune the behavior of individuals as well as the society as a whole, the study is led to encourage the reader to realize the importance of philosophical paradigms in understanding the spread of the COVID-19 pandemic. Correspondingly evidence denotes that there is a role of philosophy in pandemic era [6]. The work presented is carried out by deeper evaluation of archived journal articles published on the concurrent spread of the virus worldwide. Authors have attempted to cover the key reports grounded on critical analyses and have approached to review the articles. This has led to identify the roots of philosophical assumptions on the spread of the COVID-19 pandemic. Comparative critical discussions on the parallel and past pandemic outbreaks around the world and their implications in sociological and psychological perspectives were based when structuring the study. Continuation of reviews saturated that both

sociological and psychological research paradigms are equally used within interpretive as well as realist studies [30]. Whereas a deeper reveal was that there is a tendency towards extending the research to natural sciences. This was identified as a social need for statistical justification based on purely technical-rational viewpoints to absorb socially constructed phenomena. Understanding core sociological and psychological perspectives on the spread of the virus, authors have suggested few remedial actions helping and streamlining the controls, future avenues, loss recovery mechanisms, revival of industries and operations due to the spread of COVID-19 virus. The study can therefore be concluded by identifying the sociological and psychological perspectives of spread of COVID- 19 Virus through philosophical paradigms longing to new normal.

Referances

1. Pattanaik, S. and Harichandan, S., 2012. Sociological Foundation of Education. [ebook] DDCE, Uktal University. Available at: <https://ddceutkal.ac.in/Syllabus/MA_Education/Paper-2.pdf> [Accessed 20 March 2022].
2. Mcleod, S. A., 2019. What is Psychology? | Simply Psychology. [Online] Simplypsychology.org. Available at: <<https://www.simplypsychology.org/whatispsychology.html>> [Accessed 14 March 2022].
3. World Health Organization. 2020. Coronavirus disease (COVID 19). [Online] Available at: <<https://www.who.int/>> [Accessed 5 May 2021].
4. Jayawardena, P., 2020. talkingeconomics - Priyanka Jayawardena. [Online] Ips.lk. Available at: <https://www.ips.lk/talkingeconomics/author/priyankaj/> [Accessed 15 March 2022]
5. Benarde, M., 1973. Our Precarious Habitat. 2nd ed. W. W. Norton & Company.
6. Velázquez, L., 2020. The role of philosophy in the pandemic era. *Bioethics Update*, 6(2), pp.92-100.
7. Platon, 2003. *Diálogos. Apología. Critón. Eutifrón. Ion. Lisis.*, 1.

8. Wani, S., 2021. SUPPLEMENTARY READING MATERIAL. In *Foundations of Education*. University of Kashmir., pp.13-29.
9. Abeyasinghe, C., 2020. *Social research for higher degrees*. Colombo: Expographic books pvt ltd., p.37.
10. Plato.stanford.edu. 2021. *Epistemology* (Stanford Encyclopedia of Philosophy). [Online] Available at: <<https://plato.stanford.edu/entries/epistemology/>> [Accessed 20 May 2021].
11. Hopper, T. and Powell, A., 1985. *Making Sense of Research into the Organizational and Social Aspects of Management Accounting: a Review of Its Underlying Assumptions*. *Journal of Management Studies*, 22(5), pp.429-465.
12. Ryan, G., 2018. *Introduction to positivism, interpretivism and critical theory*. *Nurse Researcher*, 25(4), pp.14-20.
13. Mehta, P., 2021. *The Asian region and COVID 19*. *Emerald Insight*, pp.185-194.
14. Sharma, J., 2020. *Exploration of COVID-19 impact on the dimensions of food safety and security: a perspective of societal issues with relief measures*. *Emerald Insight*.
15. Noor, S., Guo, Y., Shah, S. H. H., Fournier-Viger, P., & Nawaz, M. S., 2020. *Analysis of public reactions to the novel Coronavirus (COVID-19) outbreak on Twitter*. *Kybernetes*, [online] 50(5), pp.1633-1653. Available at: <<https://doi.org/10.1108/K-05-2020-0258>> [Accessed 24 April 2021].
16. S. B. Goldberg, "Education in a Pandemic: The Disparate Impacts of COVID-19 on America's Students," OFFICE FOR CIVIL RIGHTS, US, Jun. 2021. Accessed: Mar. 20, 2022. [Online]. Available: <https://www2.ed.gov/about/offices/list/ocr/docs/20210608-impacts-of-covid19.pdf>
17. S. Wang, X. Wen, Y. Dong, B. Liu, and M. Cui, "Psychological Influence of Coronavirus Disease 2019 (COVID-19) Pandemic on the General Public, Medical Workers, and Patients with Mental Disorders and its Countermeasures," *Psychosomatics*, May 2020, doi: 10.1016/j.psych.2020.05.005.
18. S. H. Raza, W. Haq, and M. Sajjad, "COVID-19: A Psychosocial Perspective," *Frontiers in Psychology*, vol. 11, Dec. 2020, doi: 10.3389/fpsyg.2020.554624.
19. D. Aschwanden et al., "Psychological and Behavioural Responses to Coronavirus Disease 2019: The Role of Personality," *European Journal of Personality*, vol. 35, no. 1, Jul. 2020, doi: 10.1002/per.2281.
20. B. Perera, B. Wickramarachchi, C. Samanmalie, and M. Hettiarachchi, "Psychological experiences of healthcare professionals in Sri Lanka during COVID-19," *BMC Psychology*, vol. 9, no. 1, Mar. 2021, doi: 10.1186/s40359-021-00526-5.
21. V. Saladino, D. Algeri, and V. Auriemma, "The Psychological and Social Impact of Covid-19: New Perspectives of Well-Being," *Frontiers in Psychology*, vol. 11, no. 577684, Oct. 2020, doi: 10.3389/fpsyg.2020.577684.
22. N. Sun et al., "A qualitative study on the psychological experience of caregivers of COVID-19 patients," *American Journal of Infection Control*, vol. 48, no. 6, pp. 592–598, Apr. 2020, doi: 10.1016/j.ajic.2020.03.018.
23. K. J. Webber-Ritchey, S. D. Simonovich, and R. S. Spurlark, "COVID-19: Qualitative Research with Vulnerable Populations," *Nursing Science Quarterly*, vol. 34, no. 1, pp. 13–19, Dec. 2020, doi: 10.1177/0894318420965225.
24. N. Sun et al., "Qualitative Study of the Psychological Experience of COVID-19 Patients during Hospitalization." *Journal*

- of Affective Disorders, vol. 278, Aug. 2020, doi: 10.1016/j.jad.2020.08.040.
25. A. Radic, M. Lück, A. Ariza-Montes, and H. Han, "Fear and Trembling of Cruise Ship Employees: Psychological Effects of the COVID-19 Pandemic," *International Journal of Environmental Research and Public Health*, vol. 17, no. 18, p. 6741, Sep. 2020, doi: 10.3390/ijerph17186741.
 26. M. D. El Maarouf, T. Belghazi, and F. El Maarouf, "COVID – 19: A Critical Ontology of the present1," *Educational Philosophy and Theory*, pp. 1–19, Apr. 2020, doi: 10.1080/00131857.2020.1757426.
 27. M. J. Concepción-Zavaleta, J. C. Coronado-Arroyo, F. E. Zavaleta-Gutiérrez, and L. A. Concepción-Urteaga, "Does level of education influence mortality of SARS-CoV-2 in a developing country?," *International Journal of Epidemiology*, p. dyaa193, Nov. 2020, doi: 10.1093/ije/dyaa193.
 28. P. Rattay et al., "Differences in risk perception, knowledge and protective behaviour regarding COVID-19 by education level among women and men in Germany. Results from the COVID-19 Snapshot Monitoring (COSMO) study," *PLOS ONE*, vol. 16, no. 5, p. e0251694, May 2021, doi: 10.1371/journal.pone.0251694.
 29. G. Prati and A. D. Mancini, "The Psychological Impact of COVID-19 Pandemic Lockdowns: A Review and Meta-Analysis of Longitudinal Studies and Natural Experiments," *Psychological Medicine*, vol. 51, no. 2, pp. 1–38, Jan. 2021, doi: 10.1017/s0033291721000015.
 30. P. Ward, "A sociology of the Covid-19 pandemic: A commentary and research agenda for sociologists", vol.56, pp 726-735, Jul. 2020, doi: 10.1177/1440783320939682.
 31. J. Dawes, T. May, A. McKinlay, et al. Impact of the COVID-19 pandemic on the mental health and wellbeing of parents with young children: a qualitative interview study. *BMC Psychol* 9, 194 (2021). doi.org/10.1186/s40359-021-00701-8
 32. J. Ammann, C. Ritzel, N. El Benni, How did the COVID-19 pandemic influence health-related behaviour? An online survey on food choice, physical activity and changes in body weight among Swiss adults, Elsevier Public Health Collection, May. 2022, doi: 10.1016/j.foodqual.2022.104625
 33. H. Prime, M. Wade, & D. T. Browne, Risk and resilience in family well-being during the COVID-19 pandemic. *American Psychologist*, 75(5), Jul. 2020, pp 631–643.
 34. L. Ruble, A. McDuffie, A. S. King , & D. Lorenz, Caregiver responsiveness and social interaction behaviors of young children with autism. *Topics in Early Childhood Special Education*, May 28, 2008, pp 158–170. doi: 10.1177/0271121408323009