



INTERNATIONAL RESEARCH JOURNAL OF HUMANITIES AND INTERDISCIPLINARY STUDIES

(Peer-reviewed, Refereed, Indexed & Open Access Journal)

DOI : 03.2021-11278686

ISSN : 2582-8568

IMPACT FACTOR : 7.560 (SJIF 2024)

Caregivers' Stresses in Old Age Home during Covid-19 Pandemic in Nepal

Laxman Subedi

Lecturer in Social Work,
Tri-Chandra Multiple Campus, Ghantaghar,
Tribhuvan University,
Kathmandu, Nepal

DOI No. **03.2021-11278686** DOI Link :: <https://doi-ds.org/doilink/03.2024-14634721/IRJHIS2403003>

Abstract:

Government of Nepal declared the complete lockdown from March to Mid-September 2020, to prevent people from the infection of corona virus. There were multiple effects of unexpected situations created due to Covid-19 pandemic. This paper aims to explore the stresses faced by the old age homes caregivers and the strategies they followed to cope with the problems during the time of pandemic. In order to generate research evidence six caregivers from two old age homes of Devghat; Rotary Karunalaya Vridhaashram, and Samajkalyan Vridhaashram were purposively selected. In-depth interview was conducted with the selected caregivers. Based on the response of the selected cases six issues were identified for discussion. They were health, physical hardship, psychological burden, social environment, economy, and recreational activities within the boundary of old age home. Fear of virus, low salary, high work load, banned in social movement, risk of infectious corona virus, inflated rumor of mass media, low incentives were found some of the factors that increased the stress to elderly caregivers. Emotional attachment with elderly, collective social network, feelings of solidarity, moral as well as social cultural values, positive thinking, and the traditional means of entertainment motivated the caregivers, were some coping strategies adopted.

Keywords: elderly Caregivers, Covid-19 pandemic, stress, old age homes,

Introduction:

Covid-19 pandemic raised a number of questions on public health, social solidarity, science, social inequality hides under the shadow of democracy, inflated rumor of mass media (Zizek, 2020) and so on issues. During the pandemic period, the old age homes' elderly caregivers have experienced multiple stresses and attempt to cope the situation. Especially the caregivers who provide care to the frail elderly in old age homes faced various stresses on the period of nationwide lockdown in Nepal. The government declared the nationwide lockdown from twenty second March to the mid-September 2020 to prevent the effect of corona virus pandemic. This research aims to analyze the challenges generated by covid-19 pandemic stressors to elderly caregivers and the

experience of coping in lockdown period encompasses with various barriers in caring. Caring to frail elderly people in old age home contains critical challenges to care givers (Quadagno 2011). In such situation, how did they care the elderly, either in psychological or physical at the time of global pandemic is the key issue of the research.

Lack of social mobility, fear of contracting the virus, restriction on travel, captive inside the old age home, the inflated rumor by media via recurring news of rapidly increasing numbers of virus infected and death toll, and so on added sever stress to care givers to protect the frail elderly from mental and physical stress. Altomonte (2016) explains the work of caregivers under three dimensions analyzing the stress of elderly caregivers; uncertain future, conflicting rhythms, and flooded times. It considers working in critical situations and no time boundary like other profession. Caregivers could not get any pension or allowances in their retirement.

Thus, the nature of elderly care giving profession in old age homes in Nepal (as the opinions of a participant) is accompanied by uncertain working hour, troublesome task, and lack of personal freedom. Meanwhile, care recipients accuse that they are not well treated by the care givers and they have experienced a number of abuse (Quadagno, 2011) in this situation. In contrast, some caregivers argue, they can earn emotional satisfaction temporarily after making happy to the recipients. They earned social recognition and the respect from the elderly people in the sense that their health depends on the service of caregivers. In this paradoxical situation what is the ground reality, how did they handle the situation in pandemic, and what sorts of stresses they experienced during the time of lock down, are the queries of the research. Before diving in the issues; let's observe some of the key aspects of discussion associated with the research.

Caregivers:

Normally, care giving is a way of providing services to needy people like; children, elderly, handicapped, sick, and so on. Care giving for elderly either family members or professional care worker can contribute to strengthen the wellbeing of remaining life course of the elderly. Care giving; primarily women's work used to practice as taken for granted model (Quadagno, 2011) in the past but now it is modified into paid and unpaid care giving. Levin (2004:18) clarify the distinction between them 'providing unpaid or arranges for paid or unpaid help to a relatives or friends because they have an illness or disability that leaves them unable to do something for themselves or because they are getting older'.

Unpaid care giving usually conducted within family members and the emotional or philanthropically influences drive to contribute as charity in institutions. Paid care working system became popular since 1970's decade (Quadagno, 2011) among women and around sixty percent care giving labor force was from age forty to fifty-four years married women in the decade of 1980s. Female care givers, having dependent children at home, have to face more strain in comparison with

independent offspring female care givers (Goldsmith and Goldsmith, 1995). Elderly care giving is considered as unpredicted work which earned a little sympathy but more burden and stress to care givers.

Elderly People:

Elderly people are comparatively categorized under more vulnerable group of people from psychological perspective (Wissmath, Mast, Kaus, and Weibel, 2020) with accompanied by stress, strain, and burden. How did the elderly who are away from the family and depends on the service of caregivers, handle the situations during the time of global corona virus pandemic is one of the issue of this study. Elderly, old age person, senior citizens, older is the synonymous term of ageing and denotes the meaning above the age of sixty plus year's person. Gerontology is the scientific study of old age. Gerontologists study ageing accumulated between physical, social, and psychological dimension whereas Hooyman and kayak (2011) categorized ageing in to four dimensions. The first one is chronological ageing which can be defined as the number of years since someone was born.

Second dimension is biological ageing concerns with physical changes which occur in the middle and older stages of life. The third one is psychological ageing; which includes psychological changes and mental functioning according to the age. The last one is, social ageing, which refers to the change of a person's roles and relationship both within their networks of relation, friends and informal organizations. Social ageing is influenced by the perception of socio-cultural aspects of society. Thus, the concept of elderly is the accumulated forms of chronological, biological, psychological, and social aspects of individuals.

Old Age Home:

Sociologist Erving Goffman (1961) addressed the elderly care nursing homes as the total institution of elderly. It can be imagined as a mini society accompanied by the similar generational group from various background and interest. They are almost vulnerable either in physical or in mental aspects. Nursing homes, a kind of formal elderly care center, provides care to frail elderly in advanced countries like in Europe and America, and in Nepal, is called Vridhasharam; an old age home. Living in old age home is a noble concept in Nepal. It was hardly practiced in the past. After 1990, old age homes become mushrooming in every cities of the country.

First, it was practiced as free cost elderly homes later with cost elderly homes are popular assuring to maintain the quality in services. Now it became organized institutions and caregivers are formally appointed as per the demand of specific skills. Beside administration, remaining employees are women of unskilled labor in kitchen and sanitary work. Charity from public sphere holds the financial responsibilities of the elderly homes. Our concern relates the issue that how the caregivers coped the stress at the time of lockdown due to covid-19 pandemic in the old age home with limit resource accumulated from public charity and the employee without training and allowances.

Stress:

In general, stress denotes the experience produced through a person environment transaction, which results in psychological or physiological distress (Neri, Bonati, Pinelli, Borella, Tolve, and Nigro, (2007). The works of elderly caregivers are analyzed under three dimensions; uncertain future, conflicting rhythms, and flooded times (Altomonte: 2016). Altomonte further explained that 'the work of uncertain future means not knowing how long or how much they have to care. Conflicting rhythms denotes mediating between the temporalities of institutions and that of the elderly relatives; and flooded time suggest the ongoing expectations of interruptions'(Altomonte, 2016: 642). Caregivers' works do not have limitations on how long does the caring have to continue and they do not have free time to pay with family members (Quadagno, 2011). This critical situation may be a cause of reproducing a number of stress and strain to the caregivers.

Stress refers strain felt by the caregivers, the strain can be measured as tension which can exist with stress but stress can occur without strain (Quadagno, 2011). Burden is associated with the management of the task. When the stress generates from management structure; like, poor working condition, low salary, and so on are relates with burden. Stress of frail elderly caregivers can be measured with physical and mental aspects in the sense that they have to do physical labor as well as make satisfaction to the elderly. The frail elderly become dependent and cannot handle the work alone. In such contradictory situation, how do the elderly caregivers continue the service in old age home during the time of global pandemic of covid-19?

Covid-19 :

Global corona virus pandemic generated some questions on the modern advanced system of public health, science, and structure of society (Walby, 2020). Though China is the genesis place of corona virus but it questioned on the global structure of public health (Zizek, 2020). If so, does Covid 19 is a crisis? Whether crisis is constructed or real? As the arguments of Agamben (2020) crisis is socially constructed; if so, which age group of society are the mostly affected groups by corona virus, and how did they cope during the period? Are some questions increased the query of this research.

From the point of view of Social democracy, if an individual is sick, then all of the members of the group are potentially sick (Walby, 2020). People felt insecurity in social movement and the inflated rumor increase through informal sources of information like; you tube, face book, and, so on add pandemic shock to elderly care givers. Almost countries, except United States, declared complete lockdown and adapt separation policy to prevent the infection of the covid-19. The corona virus for the first time appeared in Wuhan, China at the end of 2019. It is the family of viruses that can cause illness Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). It is highly sensitive and transmits to others easily and most cases were scattered

and some linked to the Huanan Seafood Wholesale Market (J. T. Wu et.al. 2020).

Chinese Government immediately took the action of travel restriction, holiday extension, hospitalization, provision of quarantine, and even lockdown the city and so on. In March 2020, World Health Organization declared the covid-19 as pandemic. Covid-19 pandemic raised a number of questions on modern social structure of society, advanced medical technology, unsafe transportation system, and so called advanced social system of society. People began to measure every phenomenon through Covid-lens (Dahari, 2020).

Some symptoms can be seen at the beginning stage like, high fever, cough, tiredness and, loss of taste or smell. Later, some signs and symptoms are noticed that, shortness of breath or difficulty in breathing, muscle ache, chills, sore throat, running nose, headache, chest pain and, pink eyes (J. T. Wu et.al. 2020). Until February 15, 2021 more than one hundred and ten millions people were affected and killed two and half million people throughout the world. Senior citizens are highly in risk of covid-19 due to comparatively less immunity power. The elderly who are suffering from chronic disease are in risk zone.

Objective:

This research formulated the objective, 'to explore the stresses faced by the elderly homes caregivers during the time of corona-virus pandemic in Nepal'. For the purpose, six elderly caregivers from two old age homes of Devghat are purposively selected for in-depth interview. Six issues are identified as the key aspect for discussion with the participants. The following theories and theoretical framework are adapted in the research.

Theories and Theoretical Framework Followed:

Stresses of caregivers, during corona virus pandemic in old age homes, is probably a noble issue in the context of Covid-19 in Nepal. The stress of elderly care givers can be analyzed in to subjective and objective burden (Neri, et al., 2007) in comparison with mental and physical burden. Transactional stress theory of Lazarus and Folkman (1984) evaluated the stress and strain, with encompasses different levels of individual functioning such as, physiological, cognitive, social, and so on (Neri, et al., 2007). In the context of elderly; structural functional theory of ageing explains that social structure transforms the adult into elderly. It focuses on how the elderly, as a group, cope with the functional transition of roles as they move in to the senior stage of life (Hendricks 1992). As the nature of our research, grounded theory has been applied as the reliable theoretical aspect of the research.

Grounded theory can be evaluated as the systematic inductive methods for conducting qualitative research aiming towards theory development (Corbin and Strauss, 2015, p. 7). It assumes to explore the hidden secrets of various social aspects and generalize them through the inductive process. It begins with an area of study and allows the theory to emerge from the data. Grounded

theory is primarily a data analysis method with profound implications for collecting data that have mainly remained unaddressed (Charmaz and Belgrave, 2012, pp.347). It collects data by interviewing participants through open-ended questions, participant observation, and study of artifacts and texts. Thus, grounded theory creates meanings from data (Corbin and Strauss, 2015). On the background of these theoretical models the following methods have been applied during the research.

Methods:

The aim of this article is to explore the stresses faced by the elderly homes' caregivers during the time of corona-virus pandemic in Nepal, for the purpose, the explorative research design has been applied in this article. Exploring the stress of the caregivers is depends on their experiences accompanied by their role performed in old age homes. To extract their experience and feelings, qualitative method of research is appropriate and implemented in the research. For the research, in-depth interview has been conducted with the caregivers.

The questions were asked indirectly in the leisure time after the lunch and evening time creating entertaining environment with them. Altogether six caregivers from two old age homes: Devghat Samajkalyan Vridhaashram (old age home) and Rotary Karunalaya Vridhaashram (old age home) are included in this research. Caregivers from different division of labor like; cook, sweepers, guard, managers are included as the participants of the research. The conversation was recorded only for the data analysis process preserving their confidentiality.

Table No. 1 Background Details of the Participants

Respond Code no.	Sex	Age (Years)	Marital Status	Family Background	Position/ Nature of Work	Service of Years
R1	Male	33	Widower	Joint	Cook	2
R2	Female	30	Married	Nuclear	Cleaner	4
R3	Male	54	Married	Joint	Cook	26
R4	Male	40	Married	Joint	Cleaner	19
R5	Male	44	Married	Joint	Accountant	17
R6	Male	58	Married	Nuclear	Manager	1

Source: Field Visit December, 2020

As mentioned, the objective of this research, to explore the stresses faced by the elderly homes' caregivers during the time of corona-virus pandemic in Nepal' Six issues; health condition, physical hardship, psychological burden, social environment, economic support from the donors, and recreational activities within the boundary of old age home premises are prominently discussed with the caregivers. The researcher collected the information creating favorable environment to elderly

caregivers asking the questions indirectly within the conversation.

Stresses among Elderly Caregivers:

Six issues were identified for discussion, among them health was evaluated as a dominating issue during Covid-19 pandemic.

Health:

The first issue of discussion is the stress generated by health and medical availability during covid-19 lock down periods in Nepal. Fear of virus is the main booster of worries (Wissmarth, et.al, 2020) especially to the elderly and their caregivers. While visiting the elderly homes in Devghat, the caregivers react proudly in the sense that, no one elderly was affected by corona virus during the lock down period. One of the participants, who prepare food for elderly claimed that when the elderly heard the process of death ritual of the corona virus affected persons, burying the dead body by the armies, and prohibited to perform cremation by their families according to their rituals. This message made the elderly more conscious about their health. A lady care giver told that the medical practitioner provided all basic medicines and frequently suggested her which one to use in particular sickness in cell phone. A participant compared the health consciousness of elderly that they never exposed their sickness during the time of lock down because they controlled their behavior themselves due to the terror of death.

In the case of caregivers, the manager was tested positive who used to go home after the duty, shared his experience that he tried to keep secret the information and continue the work following physical distancing with other, meanwhile, the management committee provided leave to stay at home until the recovery, this information kept alert to all elderly and caregivers to follow the preventive measures of covid-19. Beside them no one felt any symptoms of corona virus. Beside them, how about the work load or physical hardship of care givers during the period is another issue of the research.

Physical Hardship:

A participant argued that he had to handle the work of double persons in cooking and serving to elderly. He told that he had to work twelve hours a day. A lady participant accused that coworkers could not support her and she felt more physical burden than psychological stress of covid-19. A cook participant of Samajkalyan Vridhaashram, expressed different feeling, when the outing of elderly was completely locked and even, they had the fear of death caused by corona virus, then some elderly supported his work and behaved friendlier than before. A participant who helps to cleaning the elderly compared that the inflated rumor of infected persons number and death toll increased more trouble than physical hardship.

Wissmarth, et.al, (2020) argue that during the period of pandemic, the level of stress is comparatively high than normal period due to the impact of various factors; like banned in social

movement, unidentified the medicine of the virus, rapidly increasing number of elderly deaths, and so on. This crumbled situation is, likely to regenerate the stress of caregivers. Walby (2020) inspects the situation, 'the crisis initiated by the pandemic, cascading through society, from health to economy, to polity, and into violence.' Our concern also relates on the view of Walby that what kinds of stress they faced, whether the stress evaporated in to violence or elderly abuse, and how did they cop the situation to overcome the stress.

Three participants shared their similar experiences that they became suffered from common cold, head ache, and fever but they did not expose their illness with elderly and continued the work, though they are the initial symptoms of covid-19, which may have the high possibility of disturbing the mind of elderly people. It was the very difficult situation they felt in the period. Other three participants, who regularly visit their house after the duty had the risk of contracting with infected person around the village. Such kinds of unconscious mental burden generate the stress to the caregivers.

Psychological Burden:

One of the participants added that beside the infection of the virus, inflated rumor of mass media add terror in their mind. Another participant stated that due to the banned of social mobility, no one visited the old age home which directly affect the main sources of elderly home's income. He further said, 'how long the situation will continue, what will happen next, and how can we preserve the elderly from the coronavirus', this strain hit their mind. A participant had the different view that he got support from elderly to maintain harmony among the elderly in old age home. He suspects that it was possible due to the fear of untimely death by the cause of covid-19. The eldest caregiver argued that social environment was very much favorable and supportive to minimize the stress.

Social Environment:

Covid-19 unfolded the debate on the relationship between individual and society (Walby, 2020, p. 17). Social contact through touching the contaminated surface is the process of transmission the virus to other individuals. To prevent them, physical distancing, use of mask, and using hand sanitizer or washing the hands with soap are some measure applied to save from the virus infection. The lady participant described that every elderly thoroughly followed the rule of preventive measure during the time. A participant felt happy that in spite of the hardship, every one provided positive feedback to overcome the critical situation of pandemic. One of the participants remembered that farmers brought huge amount of seasonal vegetables and cow milk from their farm to the elderly homes without any cost. Almost participants agreed that society members fully supported them providing positive response in elderly care. It clears that when the state mechanism jammed to perform role than community networks appeared to support the elderly of old age homes. Even though, four caregivers were expelled from their job due to budget crunch.

Economic Crisis:

Caregivers had to face double stress during the time; fear of expelling the job and had to handle the overload of the expelled coworkers. Four caregivers were expelled due to economic crisis. One of the respondents shared his past experience that the lock down banned the social movement of the people, which results the donors stop visiting the elderly home and the limit resources could not be enough to pay the salary for the caregivers. No one was ready to leave the job because leaving the work means losing earnings and need to spend saving (Quadagno, 2011). Another participant argued that there was no guarantee or secures the job; everyone has the equal chances of expelling the job. Thus, economic crisis is one of the major factors of generating stress to caregivers. Meanwhile, a question put forward to participants that how they entertain themselves around the old age homes with elderly during the time of corona virus pandemic.

Recreational Activities:

The lady participant accused the mass media which inflated the rumors of covid-19. Later she discarded listening the news and began singing religious hymn (Bhajans) with elderly. While, another caregiver loved to listen the FM programs to entertain the time of physical hard work. One of a participants used to entertain playing Baagchaal; a kind of game like chess, with elderly people in leisure time. Another participant preferred to hear the past stories of elderly people and talking the future of contemporary issues. Concluding the arguments, the caregivers entertained themselves differently according to their interest and also make easier to their work too.

Conclusion:

The aforementioned stories present a model of caregivers' stresses during the period of Covid-19 global pandemic and their coping strategies varies according to their nature of work and experience of elderly caregivers. Only three caregivers tested the covid-19 and one of them found positive. The caregiver who was found positive felt higher stress and other coworkers felt comparatively less stress but they were working in high risk zone which generated stress to them. They kept secret of their illness so that the elderly could not suspect them as covid-19 affected person. It was really a challenging situation they ever faced. Another context they had to handle double workload which add physical burden and the working period also stretches up to twelve hours. The caregivers had the challenges of losing the job in any time and high probability of transmission the virus while in outing. In between, every happening was gauged through Covid-lens (Dahari, 2020); such as, banned in social movement, mass media were provoking the corona virus news, people suspect others as infected persons, no one feels comfortable talking others, and so on social situation automatically develop the stress to the caregivers.

Beside them, the participants involved themselves creating entertaining environment to overcome the stress. All participants stated that the elderly is like their parents and old age home is

like their family, making them happy the god will be happy. They are taught as; Matridebo Bhawa: Pitridebo Bhawa: (father and mother are god and goddess). This emotional attachment supported them to cope the situation of pandemic. They received positive response from the elderly and good support from the medical supervisors, farmers, management committee, and local donors. They celebrated festivals; like mothers' day, fathers' day (Aamaako Mukha Herne, Baabuko Mukha Herne) together sharing the happiness in old age homes strengthen the harmony between elderly and caregivers. The moral values played significant role to minimize the stress of caregivers during the time of corona virus pandemic.

Concluding the point, the caregivers faced not only physical burden and psychological stress generated by covid-19 pandemic but also they struggled with some stressors; such as; gauging every incidents with covid-19 lens, risk of infectious corona virus, banned in social movement, inflated rumor of mass media and social network like face book and you tube, low salary, high work load, low incentives were found some of the factors which increased stresses to elderly caregivers. Meanwhile, four caregivers expelled from the job due to economic crisis brought by the situation of lockdown. In spite of them, emotional attachment with elderly, collective social network, feelings of solidarity, moral as well as socio cultural values, positive thinking towards future, adopting the traditional means of entertainment, mutual cooperation with elderly, cooperative nature of community, and personal ability of adjustment with situation initiated to cope the stresses generated by covid-19 pandemic.

References:

1. Agamben, G. (2020). The Invention of an Epidemic. <https://www.journal-psychoanalysis.eu/coronavirus-and-philosophers>.
2. Boss, P. (2002). Family Stress Management. Thousand Oaks, CA: Sage.
3. Brown, S.M., Doom, J.R., Lechuga-Pena, S., Watamura, S.E., and Koppels, T. (2020). *Stress and Parenting During the Global Covid-19 Pandemic*. Doi:10.1016/j.chinabu2020.104699.
4. Charmaz, K. L. Belgrave (2012). Qualitative Interviewing and Grounded Theory analysis. *The SAGE handbook of interview research: The complexity of the craft 2*. Pp. 347-365.
5. Corbin, J. and Strauss, A. (2015). Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. 4th Eds. Sage Publication.
6. Dahari, H.T. (2020). Psychological Trauma: Emotional Survival after Covid.
7. Gautam, R. (2018). Caragiving of older adults in Nepal: A Context of Urbanization, Modernization, and Globalization in a Developing Country. In M. Higo, T.R. Klassen, & N.S. Dhirathiti (Ed). *Routledge handbook on aging and the old-age in Asia-Pacific*.
8. Goffman, E. (1961). *Asylums*. Garden city, NY: Anchor.
9. Goldsmith, E, and Goldsmith, R. (1995). Fulltime Employees as Caregivers to the Elderly.

- Journals of social behavior and personality* 10: 719-30.
10. Hendricks, J. (1992). Generations and Generation of Theory in Social Gerontology. *International Journal of Aging and Human Development*. 35: 31-47.
 11. Hochschild, A.R. (1975). Disengagement Theory: A Critique and Proposal. *American Sociological Review*, Vol. 40, No. 5: p 533-569.
 12. Hooyman, N R, and Kiyak, H A. (2011). *Social Gerontology: A Multidisciplinary Perspectives*. (9th ed). Upper Saddle River, NJ: Pearson.
 13. Joung, H M. Miller N J. (2007). "Examining the Effects of Fashion Activities on Life Satisfaction of older Females: Activity Theory Revisited". *Family and Consumer Sciences Research Journal*. Vol. 35 Issue 4. Page 338-356. Wiley online Library. <https://doi.org/10.1177/1077727x07299992>
 14. Levin, C. (2004). *Always on Call*. Nashville, TN: Vanderbilt University Press.
 15. Neri, M., Bonati, P.A., Pinelli, M., Borella, P., Tolve, I., and Nigro, N. (2007). Biological, Psychological, and Clinical, Markers of Caregivers Stress in Impaired Elderly with Dementia and Age Related Disease.
 16. Quadagno, J. (2011). *Aging and the Life Course: An Introduction to Social Gerontology*. Fifth eds. New York. The McGraw-Hill Company.
 17. Sheth, K., Lorig, K., Stewart, A., Paradi, J.F., and Ritter, P.L. (2020). Effect of COVID-19 on informal Caregivers and the Development and Validation of a Scale in English and Spanish to Measure the Impact of COVID-19 on Caregiver. *Journal of Applied Gerontology* p.1-9. Sage publication. doi: 10.1177/0733464820971511
 18. Upadhyaya, P. (2026BS). *Devghat Mahatmya*. Chitwan, Nepal: Shree Bishwa Shanti Mahayagya Dhaarmik Pustakalaya.
 19. Walby, S. (2020). The COVID Pandemic and Social Theory: Social Democracy and Public Health in the Crisis. *European Journal of Social Theory*. Pp.1-22. Sage publication. Doi:10.1177/1368431020970127
 20. Wissmath, B., Mast, F. W., Kraus, F., Weibel, D., (2020). Understanding the Psychological Impact of the Covid-19 Pandemic and Containment Measures: an Emperical Model of Stress. *Institute of Psychology, University of Bern, Switzerland*. <https://doi.org/10.1101/2020.05.13.20100313>
 21. Wu, J T., K. Lung., and G.M. Leung. (2020). New casting and Forecasting the Potential Domestic and International Spread of the 2019-n Cov, Outbreak Originating in Wuhan, China: a Modelling Study *Lancet* (2020). <http://www.sciencedirect.com/science/article/pii/S1201971220300539>.
 22. Zizek, S. (2020). Pandemic! Covid-19 Shakes the World. *OR Books*.