Impact of COVID-19 Lockdown on Mental Health and Education: A Literature Review

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ABSTRACT

COVID-19 pandemic had forced most of the affected countries to implement lockdown for at least a month with the hope to return the situation back to normal. Lockdown had forced the closure of school, workplace and restricted citizens' movement. These implementations have a significant impact on mental health and education.The purpose of this paper is to review various articles related to the impact of COVID-19 lockdown not only limited to the negative impact but also the positive impact. In addition, the paper also gives a holistic view on the impact of lockdown for better planning and implementation if there is any potential outbreak in the future to reduce the unnecessary losses. We reviewed and collected articles on the impact of lockdown on mental health and education. The selected articles were organized into the 2 different themes and were summarized in a more comprehensive way. The result of the finding is, there was an increase in the number of people that suffered from mental health problems. However, more people are aware of the importance of mental health. In terms of education, shifting to e-learning method has caused education inequality. Nevertheless, online education has allowed more opportunity for learning.

Keywords: *COVID-19, lockdown, mental health, education*

1. INTRODUCTION

Covid-19 is a new viral disease caused by the virus, SARS-CoV 2 which was first discovered in Wuhan, China. The disease was initially declared as an outbreak on 30 January 2020 however due to its fast spread to various countries, World Health Organisation (WHO) had declared the COVID-19 pandemic on 11 March 2020 [1]. This led many countries to make a few policies to break the chain of transmission of this virus. One of the policies that have been implemented in many countries is lockdown.

Lockdown is the closure of access in an area, be it entry or outbound access. When an area imposes a lockdown, be it a state, province, city or district, even to smaller areas such as sub-districts and villages, people living there are not only prohibited to travel outside the area, but also not allowed to do outdoor activities. This is quite effective to reduce both morbidity and mortality due to Covid-19 [2]. In addition, there are many aspects that have been affected either positively or negatively due to the implementation of this lockdown policy.

The sudden changes that COVID-19 had brought and the unpreparedness of the community have challenged their mentality to try to adapt in the new situation. In the review, we have integrated the impact of lockdown on mental health of children, adults and the elders, as these three groups react and adapt differently to the lockdown. In addition, with the efforts to lockdown, the community must bear other major changes in terms of education that is nearly hampered due to closure of schools and educational institutions. Thus, an alternative method of online learning has been integrated at a larger scale in all levels of education. However, the effectiveness of this learning system and the integrity of students in examinations are constantly being questioned. So, this paper will give some insight on the previous research results that have been done by previous researchers.

This review was created to summarize holistically the impact of COVID-19 lockdown on mental health and education aspects which are important to give a future direction for the policy maker to implement the lockdown in a way that minimizes the negative effect towards these aspects.

2. METHOD

We have used the electronic database to pick and select the relevant journal articles. The data based that we have used were ScienceDirect, BMC Medicine, Frontiers, MDPI, Google Scholar and Pubmed. In order to ease our searching process, some searching

techniques have been used, like Boolean operators and free text term; Covid-19 AND mental health, Lockdown AND mental health, Lockdown AND Children, Lockdown AND adults, Lockdown AND elders, positive effect of covid-19, lockdown AND education, lockdown AND examination, lockdown AND pedagogy, lockdown AND research. These techniques are only used in certain databases that have these functions. The date of the articles chosen range from 2016 to 2021, to make sure the information obtained are the most updated and accurate. The type of articles that have been used are mainly research articles, but some relevant review articles were also used. The articles selected are in English and Indonesian Language. We have included a total of 29 articles and 7 websites in this review. The searches were done by 2 reviewers. In addition, to get the additional data, some organization websites were utilized. For example, the International Labour Organisation (ILO), WHO, UNICEF and Befrienders. All of the information obtained was summarized in this paper.

The information was divided into two main themes which are the impact of lockdown on mental health and education respectively.

3. RESULTS AND DISCUSSION

3.1. *Impact on mental health*

Movement restriction and the order to stay at home had inflicted the mental health of people that include the children, the adults and the elders due to major changes in their lifestyle [3] in which they are not able to communicate freely with others like how it used to be. Humans are a social organism that rely on the other for survival, the brain will feel safe if we know we can rely on others when we need help and if we feel lonely, this will stimulate our brain to release stress hormones that could affect our health.

During the lockdown children are forced to stay at home as schools, education centers and playgrounds are not allowed to open. Thus, this increased their time spent with their family and caused them to have a high tendency to adhere to their parents, become less independent and wanted to gain more attention from their parents. These psychological symptoms do not apply to the children only, but also to the teenagers themselves [4]. It may not seem to have much problem with these symptoms, but it may imply the risk of these groups of children and teenagers, refusing to go to school after the situation has stabilized. In addition, according to a research in China [5], it had shown the lockdown had caused anxiety and depression in children. Comparable symptoms also expressed by the children in Germany [5], Italy [6] and Netherlands [5]. According to Lee, the feeling of anxiety among the older adolescent is mostly due to the changes in their academic program like the postponement or abolishment of exams, cancelation of exchange program and school related event [7]. However, the study by Rossi et al. in Italy, shows that

those who used to spend more time indoors before the pandemic had suffered less during the lockdown [6].

Moreover, the lack of outdoor activities causes the children prone to spend more time on the internet and social media which indirectly increase the chance of them getting cyber bullied [4]. This may further deteriorate their mental health and self esteem. Not only cyber bullying, domestic violence against children has also been one of the concerns during the lockdown as some of the adults are losing jobs and the high levels of stress might cause them to vent their anger on their children. However due to the lockdown, this type of violence is mostly undetectable as no one except the family members can see the bruises on the children's body or any psychological changes. In the long term, this might leave trauma to the children.

As an adult, despite being the least vulnerable toward the COVID-19 disease, they are also severely affected by the lockdown itself due to change in their social life, education and careers which is at the peak in their age [9]. According to the International Labour Organisation, in 2020 the lockdown have caused 114 millions people to lose their job [10] which may become one of the reasons for bad mental health in adults. However, the symptoms appeared to be different between male and female, in which females tend to be more depressive while male tend to have anxiety according to a study done by Vloo et al. in the Netherlands [11]. The depressive sign shown in females was due to some of them having their job as a mother and a career woman at the same time [11].

There are also some underlying factors that differ the level of mental health between the adults. First is the physical activities. In the study of the general population of Norwegian the symptoms of anxiety and depression are lower in the group that is active in doing physical activities during the lockdown compared to those who are not active [12]. In a worldwide study, it has found out that the physical activities of the population have decreased for 27.3% within 30 days of lockdown [13]. In addition, low socioeconomic status like lower income is also one of the factors that contribute to bad mental health among the adults [14].

Being the one of the most vulnerable groups, the elders have been imposed with a stricter movement control order compared to the other age groups [15] which may amplify the adverse effect of the lockdown toward their mental health. In the US, at the early 3 months duration of lockdown alone, 25% of them have started to feel stress [16]. Feeling of loneliness[17] and depression have also been reported among the adults during the lockdown [14]. This has been one of the most important concerns as long term depression in the elders may increase the risk of getting Alzheimer's disease at later time [18]. Add on to that, decreased physical activities, social activities and increase in alcohol consumption have been shown to exacerbate the situation [19]. Despite having sophisticated technologies that can help the elders to connect to their families and friends via social media and phone calls, they still feel lonely. This may be due to the fact that they are the group that does not use much of these inventions [20].

A global scale of measuring the prevalence of mental health problems has been done [21] with the data collected January 1, 2020, to June 16, 2020 showing there was an increase in mental health problems compared to the time before the pandemic. However, when compared with another study regarding the worldwide suicide rate with the data collected from similar timeline (from April 1, 2020 to July 31, 2020) it shows the suicide rate does not change or even declined [22]. The results shown may be due to it is just the beginning of the pandemic and there might be a change when the pandemic and lockdown extend further.

In short, all age groups' mental health have been disrupted in a bad way. However, it is nice to note that women, the elderly and young children are most likely to suffer the worst in this situation [23].

On the other hand, some positive effect of lockdown towards mental health in the long term is the willingness for people to reach out for help when they need mental support. This has been shown by the increase in the number of calls to mental health hotlines in a few countries. In Malaysia the number of calls to Befrienders KL during lockdown hasincreased by 50% [24] while in the US there are more than 1000% increase of people calling federal emergency hotlines for people in emotional distress during April 2020 compared to April 2019 [25]. Even though this implies the increase in the number of people suffered from mental health problems, at least they are willing to get help to prevent them from ending up in the worst way. Not only that, according to Raj & Bajaj [26] the development of coping mechanisms to deal with the pandemic has also increased. Thus, if there is another wave of pandemic or isolation in the future they will adapt better. Last but not least, there is also a speculation by Dr Julianne Holt-Lunstad, psychologist at Brigham Young University and Peter Varnum, Global Mental Health Lead, during their interview by Al-Jazeera English stated that this pandemic and lockdown will help to break the social stigma on mental health and people will accept it as natural part of all people's lives [27].

3.2. Impact on education

Early childhood education is the most crucial stage of learning in order to shape who they are in the future. But the temporary closure of nursery and kindergarten due to the lockdown, these kids' opportunity to get a normal education have been heavily impacted. Thus, the only way is by having them adapt to the virtual learning environment. Nevertheless, young children have limited knowledge on the use of electronic devices and they have problems engaging with the online class activities, supervision and guidance from their parents are highly demanded [28]. Thus, the need of parents to spend time with their child studying despite having a busy 'work at home' schedule, has become the pullback of e- learning. Ineffective ways to learn social skills and interaction have also been the concerns of this learning platform [28].To add on, children who came from low-income families are

the most impacted. This is because, most of their parents will prioritise the usage of money on buying basic necessities like food instead of buying equipment for their children's online education. Moreover, internet access is also a problem in poor households [29]. These education inequalities have also been shown in other education levels.

Formal education (from primary school to tertiary education) has also switched to online platform. However, for those who are taking the major exam like university entrance exam was most likely to be impacted during the lockdown. Some examination have been postponed and some even have been cancelled in order to decrease in the rate of COVID-19 transmission. For instance, in China the university entrance exam, Gao Kao had been postponed 1 month [30]; in Malaysia, Sijil Pelajaran Malaysia (SPM) had delayed 3 month [31]. Much worst, in some country like Indonesia, Pakistan and India the examination have been cancelled and the evaluation will be done by reviewing their past achievement. Worldwide major exam like GCSE, A-level and Btec also have been cancelled due to this pandemic [30]. Meanwhile in university level, the some universities opt to have online examination or replacing alternative assessment with the final exam. However, students' integrity and the possibilities of cheating have been one of the concern in these type of examination [32]. Such major shift in the examination also one of the reason that degrading the mental health of students which have been mentioned in previous theme.

In terms of the methods of delivery or the pedagogy of education, online live lectures and pre-recorded lectures are widely adapted in schools and universities. However, just like any stage of education, the sudden changes from face-to-face to online platforms causes the students and educators to readapt to the new system. The educator needs to use another pedagogical approach, new ways of students evaluation and curriculum planning. While students need to be more discipline in order to survive, as no teacher besides them in real person to support them [33]. To test the effectiveness of e-Learning in higher education, a study done by El Said has compared the grades between two groups of students with the same courses from Spring 2019 cohort (face-to-face learning) and Spring 2020 cohort (fully e-Learning) respectively. He found out that there is no significant difference in students' grades, which means e-Learning is as effective as face-to-face learning. However, there are few limitations in the study in which the studies only include students from a single course, thus more valid results can be obtained if the study was done in a larger scale and longer duration [32].

For university students who are doing their research, there are many more challenges that need to be faced by them, as laboratories need to be closed and experiments that require human samples may not be able to be carried out. Thus, they need to modify their current research to meet the standard operating procedure that has been set by the policy maker in order for them to be able to continue their

work. Not only that, the sudden implementation of the lockdown also makes it impossible for the researcher to finish up their research before the deadline of their funding. However there are some funding agencies that allow the extension of funding duration like NIH and EMBO [34]. In addition, an article by Elmer & Durocher had suggested the researcher to convert their research into the form like research-focused project (systematic review, literature review, data analysis and etc.) and capstone-focused project (align with the current COVID-19 issues, doing research in historical perspective and etc). This is to ensure the research activities will not be halted despite the lockdown [35].

On the other hand, some silver lining of the pandemic on education are allowing distant learning and promoting collaborative work in anywhere. These have allowed education to keep going even if the person is in his home, international collaboration and student exchange programme can be held without the need to pay expensive flight ticket, accomodation and other basic necessities. Increased digital literacy and replacement of paper with electronic files are also few positive changes that the pandemic and lockdown have brought to education [36].

4. CONCLUSION AND RECOMMENDATION

4.1. Conclusion

This review aimed to summarize holistically the positive and negative impact of COVID-19 lockdown on mental health and education. Thus, it can be concluded that the negative impacts of lockdown is most likely to be a short term impact and the positive impacts is the long-term impact. The negative impact of lockdown to mental health of the general population is the increase in anxiety and depressive symptoms. However, symptoms like clinginess are more prominent in children. On the other hand, the positive impact to mental health is the increase the population's willingness to ask for help, develop coping mechanisms and diminish the social stigma on mental health.

Meanwhile, the negative impact of lockdown on education are the need for extra expenses on mobile data and devices, constant guidance for pre-school children by parents, wrongdoing in examinations, cancellation of examinations and the need for adaptation of learning and research activities. Nevertheless, this new e-learning has allowed us to learn wherever and whenever we are and increase our digital literacy at the same time.

4.2. Suggestions

Based on these conclusions, the practitioner should increase the frequency of mental health surveillance in order to identify the group of people that suffer mental health problems the most and make compulsory for them to have

mental health consultation. Not only that, financial aid and food banks should be provided to those who lost their source of income. In terms of education, every institute should have a backup online learning module, to ensure a smooth transition of change in learning method if such pandemic occurs again in the future and all of the educators should make it compulsory to attend training for e- learning and teaching system. Not only that, more research on the effective pedagogical approach on e-learning should be done to ensure the students can enjoy the class despite the changes. Last but not least, e-learning equipment aid and increase in broadband coverage should be done to ensure the underprivileged students will not be left out in education.

REFERENCES

[1] World Health Organisation. (2020, March 11). WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020.
Retrieved from https://www.who.int/director-general/speeches/detail/who-director- general-s-opening-remarks-at-the-media- briefing-on-covid-1911-march-2020

[2] Ghosal, S., Bhattacharyya, R., & Majumder, M. (2020). Impact of complete lockdown on total infection and death rates: A hierarchical cluster analysis. *Diabetes Metab Syndr, 14*(4), 707-711. doi:10.1016/j.dsx.2020.05.026

[3] C. Fong, V., & Iarocci, G. (2020). Child and Family Outcomes Following Pandemics: A Systematic Review and Recommendations on COVID-19 Policies. *Journal of Pediatric Psychology, 45*(10), 1124-1143. doi:10.1093/jpepsy/jsaa092

[4] Singh, S., Roy, D., Sinha, K., Parveen, S., Sharma, G., & Joshi, G. (2020). Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative review with recommendations. *Psychiatry Research, 293*, 113429. doi:https://doi.org/10.1016/j.psychres.202 0.113429

[5] Luijten, M. A. J., van Muilekom, M. M., Teela, L., Polderman, T. J. C., Terwee, C. B., Zijlmans, J., Haverman, L. (2021). The
impact of lockdown during the COVID-19 pandemic on mental and social health of children and adolescents. *Quality of Life Research*.doi:10.1007/s11136-021-02861-x

[6] Rossi, R., Socci, V., Talevi, D., Mensi, S., Niolu, C., Pacitti, F., Di Lorenzo, G. (2020).
COVID-19 Pandemic and Lockdown Measures Impact on Mental Health Among the General Population in

Italy. *Frontiers in Psychiatry, 11*(790). doi:10.3389/fpsyt.2020.00790

[7] Lee, J. (2020). Mental health effects of school closures during COVID-19. *The Lancet Child & Adolescent Health, 4*(6), 421. doi:https://doi.org/10.1016/S2352- 4642(20)30109-7

[8] Cooper, K. (2020, September 4). Don't let children be the hidden victims of COVID- 19 pandemic. Retrieved from https://www.unicef.org/press- releases/dont-let-children-be-hidden- victims-covid-19-pandemic

[9] Alonzi, S., La Torre, A., & Silverstein, M. W. (2020). The psychological impact of preexisting mental and physical health conditions during the COVID-19 pandemic. *Psychological Trauma: Theory, Research, Practice, and Policy, 12*(S1), S236-S238. doi:10.1037/tra0000840

[10] International Labour Organization. (2021, January 25). ILO: Uncertain and uneven recovery expected following unprecedented labour market crisis. Retrieved from http://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_766949/lang- -en/index.htm

[11] Vloo, A., Alessie, R. J. M., Mierau, J. O., Boezen, M. H., Mierau, J. O., Franke, L., . . . Jankipersadsing, S. A. (2021). Gender differences in the mental health impact of the COVID-19 lockdown: Longitudinal evidence fromthe Netherlands. *SSM - Population Health*, 100878. doi:https://doi.org/10.1016/j.ssmph.2021. 100878

[12] Ernstsen, L., & Havnen, A. (2021). Mental health and sleep disturbances in physically active adults during the COVID-19 lockdown in Norway: does change in physical activity level matter? *Sleep Medicine,77*,309-312. doi:https://doi.org/10.1016/j.sleep.2020.0 8.030

[13] Tison, G. H., Avram, R., Kuhar, P., Abreau, S., Marcus, G. M., Pletcher, M. J., & Olgin,J. E. (2020). Worldwide Effect of COVID-19 on Physical Activity: A Descriptive Study. *Annals of Internal Medicine, 173*(9), 767- 770. doi:10.7326/M20-2665

[14] Ahmed, M. Z., O. Ahmed, Z. Aibao, S. Hanbin, L. Siyu, and A. Ahmad. (2020). Epidemic of COVID-19 in China and associated Psychological Problems. *Asian Journal of Psychiatry, 51*, 102092–102099.

[15] Robert, M. (2020, May 5). Coronavirus: 'Segment and shield' way to lift UK lockdown now. *BBC News*. Retrieved from https://www.bbc.com/news/health-52542108

[16] Van Orden, K. A. (2021). Addressing Loneliness in Older Adults During the COVID-19 Pandemic: A Commentary on "Understanding Psychological Distress and Protective Factors Among Older Adults During the COVID-19 Pandemic". *The American Journal of Geriatric Psychiatry*. doi:https://doi.org/10.1016/j.jagp.2021.04. 009

[17] Heidinger, T., & Richter, L. (2020). The Effect of COVID-19 on Loneliness in the Elderly. An Empirical Comparison of Pre-and Peri- Pandemic Loneliness in Community- Dwelling Elderly. *Frontiers in Psychology, 11*(2595). doi:10.3389/fpsyg.2020.585308

[18] Martins Van Jaarsveld, G. (2020). The Effects of COVID-19 Among the Elderly Population: A Case for Closing the Digital Divide. *Frontiers in Psychiatry, 11*(1211). doi:10.3389/fpsyt.2020.577427

[19] Scott, J. M., Yun, S. W., & Qualls, S. H. (2021). Impact of COVID-19 on the Mental Health and Distress of Community-Dwelling Older Adults. *Geriatric Nursing, 42*(5), 998-1005. doi:https://doi.org/10.1016/j.gerinurse.202 1.06.020

[20] Friemel, T. N. (2014). The digital divide has grown old: Determinants of a digital divide among seniors. *New Media & Society, 18*(2), 313-331. doi:10.1177/1461444814538648

[21] Nochaiwong, S., Ruengorn, C., Thavorn, K., Hutton, B., Awiphan, R., Phosuya, C., . . .

[22] Wongpakaran, T. (2021). Global prevalence of mental health issues among the general population during the coronavirus disease-2019 pandemic: a systematic review and meta-analysis. *Scientific Reports, 11*(1), 10173. doi:10.1038/s41598-021-89700-8

[23] Pirkis, J., John, A., Shin, S., DelPozo-Banos, M., Arya, V., Analuisa-Aguilar, P., . . . Spittal, M. J. (2021). Suicide trends in the early months of the COVID-19 pandemic: an interrupted time-series analysis of preliminary data from 21 countries. *The Lancet Psychiatry, 8*(7), 579-588. doi:10.1016/S2215-0366(21)00091-2

[24] Ramiz, L., Contrand, B., Rojas Castro, M. Y., Dupuy, M., Lu, L., Sztal-Kutas, C., & Lagarde, E. (2021). A longitudinal study of mental health before and during COVID-

19 lockdown in the French population. *Globalization and Health, 17*(1), 29. doi:10.1186/s12992-021-00682-8

[25] Ainaa Aiman. (2021, June 25). The call for help is getting louder, says Befrienders. Retrieved from https://www.freemalaysiatoday.com/categ ory/nation/2021/06/25/the-call-for-help- is-getting-louder-says-befrienders/

[26] Wan, W. (2020, May 4). The coronavirus pandemic is pushing America into a mental health crisis. Retrieved from https://www.washingtonpost.com/health/2 020/05/04/mental-health-coronavirus/

[27] Raj, T., & Bajaj, A. (2021). Living alone in lockdown: Impact on mental health and coping mechanisms among young working adults. *Current Psychology*. doi:10.1007/s12144-021-01511-2

[28] Al Jazeera English. (2020, May 19). How does the lockdown affect our mental health? | Start Here [video]. Retrieved from https://youtu.be/3eIU38CIoTk.

[29] Cano-Hila, A. B., & Argemí-Baldich, R. (2021). Early Childhood and Lockdown: The Challenge of Building a Virtual Mutual Support Network between Children, Families and School for Sustainable Education and Increasing Their Well-Being.*Sustainability,13*(7). doi:10.3390/su13073654

[30] Sakti, S. A., & Hidayat, L. (2021). Transformasi pembelajaran paud di era pandemi covid- 19 (study kasus pada masyarakat miskin pedesaan). *Jurnal Riset Golden Age* PAUD *UHO,4*(1),10-15. doi:http://dx.doi.org/10.36709/jrga.v4i1.1 6355

[31] Kwan, F. (2021, April 29). For SPM 2020 students, the wait is endless. Retrieved from https://www.freemalaysiatoday.com/categ ory/nation/2021/04/29/for-spm-2020- students-the-wait-is-endless/

[32] El Said, G. R. (2021). How Did the COVID-19 Pandemic Affect Higher Education Learning Experience? An Empirical Investigation of Learners' Academic Performance at a University in a Developing Country. *Advances in Human- Computer Interaction, 2021*, 6649524. doi:10.1155/2021/6649524

[33] Rashid, S., & Yadav, S. (2020). Impact of Covid-19 Pandemic on Higher Education and Research. *Indian Journal of Human Development, 14*, 097370302094670. doi:10.1177/0973703020946700

[34] A conversation on the effects of the COVID-19 pandemic on junior researchers' careers with funders

and university leaders. (2021). *Nature Communications, 12*(1), 2096. doi:10.1038/s41467-021-22040-3

[35] Elmer, S. J., & Durocher, J. J. (2020). Moving student research forward during the COVID-19 pandemic. *Advances in Physiology Education, 44*(4), 741-743. doi:10.1152/advan.00153.2020

[36] Garg, S., Diwakar, A., Upadhyay, S., Kumar, G., & Singh, G. (2020). EFFECT OF COVID-19 ON SCHOOL EDUCATION SYSTEM: CHALLENGES AND OPPORTUNITIES TO ADOPT ONLINE TEACHING AND LEARNING. *Humanities & Social Sciences Reviews, 8*, 10-17. doi:10.18510/hssr.2020.862

[37] Sharma, Y. (2021, January 16). Global exam disruption continues into its second year. Retrieved from https://www.universityworldnews.com/po st.php?story=2021011511142211