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LITERATURE REVIEW Open Access

SPECIAL ISSUE

LITERATURE REVIEW: QUARANTINE AND LOCKDOWN DURING COVID19 OUTBREAK IMPACT ON MENTAL HEALTH PROBLEM

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Abstract

Introduction*: Covid19 is a unique disease that was first confirmed in Wuhan, Wubei, China in late 2019 and within 6 months the virus spread rapidly throughout the world. The obscurity in overcoming this virus is the background of the interventions applied. Several interventions conducted, such as nationwide lockdowns, quarantine and isolation. In addition to avoid the virus transmission, these interventions also have psychological impacts that affect the mental health. We did a review of the mental health outcomes referring to several interventions amid Covid19 outbreak using two databases. Out of 302 papers found by the search engine, 5 articles were counted in this review.* ***Discussion:*** *Most reviewed researches proclaimed adverse mental health problems, along with anxiety, stress, and post-traumatic stress disorder. Stressors consist of infection fears, grieves, boredom, stigma, faulty information, short sleep duration, and minimum social activities. Several researchers have proposed abiding effects.* ***Conclusion:*** *Social interventions which are imposed limit the process of meeting the needs of human life. It is crucial to point out the mental health of the population and take charge to diminish its adverse effects for the time being. Therefore, the Government needs to implement a strict and fair policy, especially on the issue of community survival. Public health protocol socialization needs to be done, especially in controlling the transmission of viruses in public places, such as malls, public transportations, schools, workplaces, and many other.*

INTRODUCTION

A sequence of pneumonia cases of unidentified origin was firstly confirmed in the last of 2019 in Wuhan, Hubei, China (1-2). This disease is related to severe acute respiratory syndrome (SARS). A unique coronavirus, namely SARS-CoV-2, later on, was identified under the aegis of World Health Organization (WHO), in the role of the original infection from the pandemic which happened in China and other parts of the globe(3). On February 11th, 2020, Director-General of WHO, addressed the infection which was carried out by SARS-CoV-2 or notoriously known as "Covid19". Later, on March 11th, 2020, more than 4.000 deaths and 118.000 cases were confirmed within 114 countries, WHO announced the pandemic status (4).

The Covid19 virus spreads rapidly within 3 months, on June 22nd the number of confirmed cases becomes 8,860,331 cases with 465,740 deaths in 216 countries (5). At the present stage, WHO recommends to take some precautions in order to minimize the chances of being infected to the virus by adapting a healthy lifestyle; washing hands regularly and wholly with soap or cleaning hands with alcohol-based hand rub with the proper technique, maintaining a proper distance at least 1 to 3 meters with others, avoid being in the crowds, avoid touching face, make sure to wear a mask when going out, stay at home and self-isolate when caught the flu, last but not least call the emergency number when having cough, fever, and difficulty breathing (6). Various sources have broadcasted information in regards to the Covid19 outbreak and to remain updated, people unconsciously consume every news and encounter high anxiety while doing so, hence, concerns of "fake news" associated with Covid19 have been on the rise(7,8,9). In the same manner with such condition, several media have been adopting the phrase "end of the world" subsequent to the disease's transmission, leading to enlarged concern (10).

The occurrence of infectious diseases outbreak, such as Covid19, has many imperceptible impacts such as the psychological distress and mental health, especially on people living in pandemic areas. Various interventions have been implemented, such as self-isolation, nationwide lockdowns, physical distancing, and other efforts for the sake of further transmission of the infectious disease prevention. These interventions are followed by many symptoms that draw connections to mental health problems, such as; severe physical or mental pressure, desperation, post-traumatic stress disorder (PTSD), insomnia, irritability, fury, and emotional exhaustion (8-9).

In the previous several weeks during this Covid19 epidemic, the accelerating mental health problems among the overall society, people in old age, youngster, immigrant laborer, and health experts apart from the infected persons by Covid19 have been noticed. Additionally, the majority of populations may have encountered some notorious risk factors for depression and anxiety along with high mortality, resource and food scarcity, discrimination, also fears of being infected or infecting the virus, which may result in some adverse mental state outcomes during the infectious disease outbreaks (11). With the above objectives in mind, this review is aimed to sum up the prevailing research focus on mental health concerns associated with the psychosocial intervention amid the Covid19 outbreak.

DISCUSSION

This study pointed out a narrative review to portray current literature due to mental health outcomes because of interventions throughout the Covid19 outbreak. The database we use were Sciencedirect and Pubmed with these following keywords; mental health, Covid19, lockdown, quarantine, physical distancing and self-isolation. The search engine obtained 302 articles published based on the keywords used, however, we excluded titles which did not match the topic. In the end, we used a total of five articles as references, because these articles meet the inclusion criteria, such as original research, quarantine, stay at home, the article's availability in the English language, and isolation due to the Covid19 outbreak (Figure 1).

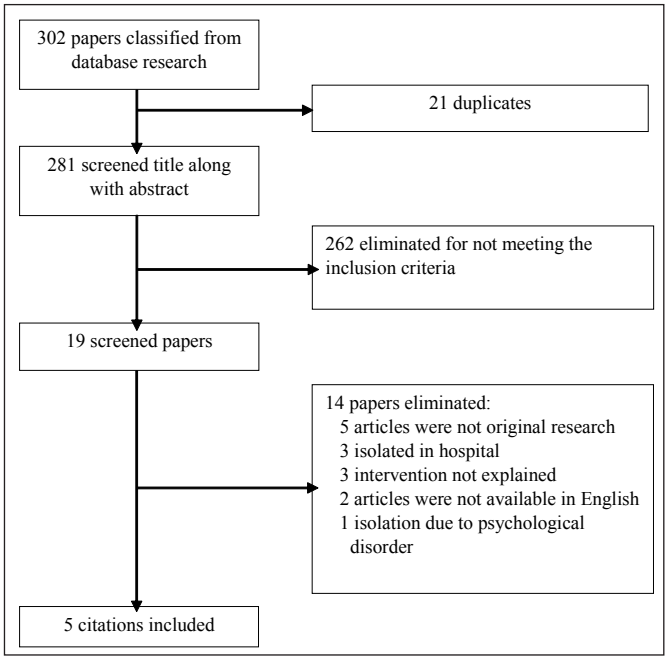

Figure 1. Citation Screening

A literature study is a method for analyzing, understanding, and interpreting current studies with

Table 1. Study Characteristics

References	Research Title	Population	Design	Results and Conclusion
Wanjie Tang, Hu Tao, Baodi Hu, Chunhan Jin, Gang Wang, Chao Xie, et al. (2020)	Prevalence and correlates of PTSD and depressive symptoms one month after the outbreak of the COVID-19 epidemic in a sample of home-quarantined Chinese university students	2485 participants from 6 universities	Cross-sectional study	Result: Due to quarantine, anxiety incidence was 7% followed by 9% of depression. Conclusion: The psychological impact of this pandemic need attention, hence, preparing interventions mostly in psychological matter needs to be done, especially for students.
Matthew T. Tull, Keith A.E, Kayla M.S, Julia R.R, Jason P.R, Kim L.G (2020)	Psychological Outcomes Associated with Stay-at-Home Orders and the Perceived Impact of COVID-19 on Daily Life	500 grown up participants in United States from 45 country	Cross-sectional study	Result: The study indicates that there was an increase incidence in anxiety and loneliness regarding the new rules of staying at home. However, age and gender did not affect this result. Conclusion: Regarding the stay-at-home policy, there was increased level of anxiety, especially in monetary sector.
Lee Smith, Louis Jacob, Anita Y.D.M, Nicola C.A, Yvonne B., et al., (2020)	Correlates of symptoms of anxiety and depression and mental wellbeing associated with COVID-19: a cross-sectional study of UK-based respondents	932 adults in United Kingdom from 18 years and above	Cross-sectional study	Result: The incidence of mental health problem was 36.8% in respondents who isolated themselves amid the outbreak. Conclusion: Women, young people, low annual income, and active smokers have higher rates to undergo mental health problems.
Paula Odriozola-González, Álvaro P.G, Rodrigo de Luis-García (41)(42)	Psychological e□ects of the COVID-19 outbreak and lockdown among students and workers of a Spanish university	2,530 respondents in total from University of Valladoid	Cross-sectional study	Result: Average to extreme levels of anxiety (21.34%), depression (34.19%), and stress (28.14) were experienced by Spanish university students and workers. Conclusion: University needs to facilitates psychological services as an effort to minimize the mental health impact due to outbreak.
Kumar Saurabh, Shilpi Ranjan	Compliance and Psychological Impact of Quarantine in Children and Adolescents due to Covid-19 Pandemic	252 children and adolescents. 121 children and adolescents quarantined and 131 more were not quarantined.	Case-Control study	Result: anxious (68.59%), disability (66.11%) and fright (61.98%) were more felt by young people who were quarantined. Conclusion: To improve compliance of quarantine, financial support and increasing knowledge of the community need to be done.

research topics and questions. The literature review uses a narrative method that is obtained from synthesized results by classifying the data matched with the selected problem. Research articles that reached the benchmark were selected also summarized in a tabular form (Table 1).

Disasters are massive situations that are usually unanticipated which lead to mortality, severe mental or physical pain, and destruction of belongings. Even though there are still no precise description of disaster in the literature, most researches agree that disasters take part in three crucial symptoms of large-scale traumatic situations (12). First, disasters endanger a great scale of population, notwithstanding of the definite amount of mortality. Second, they have an effect on social processes, inflicting disturbance of assistances and social networks, and communal loss of resources. Third, they required secondary consequences, specifically perceptible mental and physical pains, especially among those affected (12).

Many studies were administrated throughout the Covid19 pandemic particularly in mental health. Several studies state that as long as a scourge happens in a locality, mental health has to be thought of (11-13). According to WHO, in any randomly changing condition, it is mundane for people to feel anxious, stressed and distressed, especially in this unpredictable, fast spreading infectious disease and its various psychological interventions implemented based on each country's current situation (14). As a result, quickly increasing craze and panic relating to Covid19 might generate enduring psychological issues publicly from all the socioeconomic domains, which may cause even a lot of prejudicial within the long-term than the virus itself (13).

Quarantine and Mental Health Outcomes

During the outbreak, adolescents were bumped into a brand-new phase of insecurity: worry regarding the health along with work of their relatives, the wide-raging issue of deaths, abrupt split from acquaintances, as well as academy disarranging. Several studies suggested mental health outcomes for people quarantined in a different type of ages (15-16). A study (15) was made up based on a group of web-based self-report analyses in order to facilitate undergraduate students by using an ease selections within six colleges among two populous districts in southwest China, Chengdu and Chongqing, a reference point designed to meet the needs of undergraduate student analysis for this scheme has

been established. From 3610 students, 2501 completed the survey. It says that university students in China who have been quarantined for a month with a range less than a week, in between one to two weeks, two to four weeks, and more than four weeks after the outbreak generate the incidents of uneasiness and despair were found to be a pair of 7% and 9.0%. In the same study, most participants had chosen to quarantine at home, and it was also found that students with not much duration of sleeps, were more probably to expertise post traumatic disorder (PTSD) and depressive symptoms, which means the proportion of PTSD and depression's scores were more advanced, especially in those who encountered severe fright, stayed within the worst-hit zones, also were in their final year of university.

These prevalence rates of anxiety and depression were pointedly lower than the previous study. From the 7143 college students in China, most of the respondents had not experienced any anxiety symptoms (75.1%), followed by 21.3% students felt light anxiety, 2.7% students with average anxiety, also extreme anxiety were felt by 0.9% students (17). Furthermore, 1.13% students who lived away from parents, 2,56% seeing relatives along with colleagues suffering Covid19, increased the potential to felt extreme anxiousness, as well as those were from rustic areas (1.02%), also their families not having a steady income (1.09%), were aspects which have a part in accelerating anxiety ($P < 0.001$).

Another study (16) was from a population of children and adolescents in India, aged 9 to 18 years, who were quarantined during the Covid19 outbreak, showed that, depending on conditions was low (7.43%), illustrates that current quarantines have lowest control of the transmission, put family members at greater risk of contracting the virus. 17.35% prevention of community transmission, while prevention in households is only 10.71%. All in all, larger youngsters and juveniles were resistant, have the latency to put their family and community in danger. Therefore, in the same study, also stated that quarantined youngsters also juveniles encountered more extreme mental and physical suffer than non-quarantined subjects. The most moderate reactions encountered during the quarantine were 68.59% anxious, 66.11% feeble along with 61.98% fright.

Some of these result studies, showed that quarantine during outbreaks of unexpected events notably infectious disease outbreaks brought out several signs of mental health issues, in the same manner with the presence of anxiety and fear, lack of sleep, or even insomnia. Some of these symptoms have higher rates in female respondents. A research conducted on families in America when exposed to H_1N_1 and SARS-CoV showed the presence of PTSD due to the imposition of quarantine on children (30%) (18). Another survey was established in the middle of the explosion of Covid19 cases concerning 8,079 adolescents in China aged 12 to 18 years, showed an elevated incident of indication concerning misery (43%), uneasiness (37%), and a combination of the two (31%)(19). The female gender has the greatest risk of experiencing symptoms of mental health disorders. These results support a study previously conducted on 2,091 and 285 adults in China after several weeks related to Covid19 infection in Wuhan, proclaimed the PTSD prevalence of 4.6% and 7%, respectively, often linked to female sex and bad sleep quality (20-21).

Other studies have stated that young age is an aspect for psychological issues during Covid19 (22-23). One survey has shown a significant signs of uneasiness and depression found in young individuals compared to the older people (22). In addition, one research found that people who are over their 40s had a 0.40 chance to experience anxiety (95% CI: 0.16-0.99), in contrast to that of people who are below 40 years old, indicating that adolescents are more likely to experience anxiety (23). The results of this study support the previous study (24), which states that from 40.4% of respondents who experienced psychological disorders, 14.4% of the adolescent group experienced PTSD symptoms. PTSD symptoms experienced by junior high school respondents or lower with a higher significance ($P <0.05$) compared to college or university respondents. Likewise, respondents in their senior secondary education have higher scores ($P<0,05$) than scholars. These results indicate that when people were still in a low level of education, such as junior high school or lower, the ability to deal with changes in life is less optimal, so that it often caused symptoms of PTSD and an impact on their mental health. These groups have the potential to encounter a long-term mental health problem because of their inability to cope through crisis (25). The authority and associated mental establishments ought to take applicable psychological subject matter measures to facilitate this cluster pass though the Covid19 impacts.

Gender was again described as an aspect to undergo psychological problems amid the Covid19 outbreak (19, 23, 24-25). These results were followed by other studies that stated that female respondents were more presumably to undergo anxiety. Female patients had a higher probability of experiencing uneasiness along with despair (26). A subsequent study, also found that female respondents had lower coping skill scores and higher GHQ-12 and PTSD scores. A different study stated that perceptions of disability in female patients

were higher than in male, also adjusts to one and another (27). Women were a lot of probable to point out PTSD symptoms throughout the Covid19 epidemic, whichever might thin out the PTSD rate, conversely, men require greater liability which ultimately leads to frustration, symptoms of PTSD and psychological distress (28).

The result showed that most of the respondents had a particular theory about Covid19, but some did not. From several studies, shown that the main key in controlling an outbreak transmission is the adaptability that people have to apprehend and react to information (29). In conclusion, education by public media for the community ought to be administrated, as well as utilizing the broadcast as an effort to prevent and control the outbreak (30), with the hope that young people can be educated so they could response to take care of themselves, their families, and those around them.

As for the limitations of this study, first, this study conducted a survey of certain age groups, so that it cannot generalize to other populations. Second, this study was conducted one month after the quarantine was enforced, therefore the onset of mental health problems can be stated as a normal thing for humans in terms of facing changes in life. Third, this study did not mention any factors such as coping styles which could have been affecting the results.

Lockdown and Mental Health Outcome

The vast number of the virus spreading all across the globe has prompted the government from various countries to establish nationwide lockdowns and issue various health protocols, such as physical distancing and stay-at-home order status. Consequently, citizens are doing adjustment in every aspect of their lives and not a few of them are suffering from psychological stress as an outcome of the coronavirus pandemic. Throughout lockdown, as one of the many interventions to subdue Covid19 exposure, former psychological problems have been labelled as a serious risk factors to a person's psychological changes, specifically in loneliness, stress, depression, also anxiety (31-32).

One particular study that we found did a networked survey regarding the influence of the outbreak during lockdown (33). The online questionnaire was measured using Amazon's Mechanical Turk; MTurk. It is one of the largest and most popular platforms to gather workers to perform tasks online. It involved participants who are MTurk workers living in the US under active stay-at-home order. MTurk is designed to produce promising work results from individuals of various backgrounds through a series of complex requirements, which allows organizations or companies to receive only high-quality products from workers online (34).

The participants were asked about their experiences associated with the outbreak. They responded upon questions assessing their experience undergoing the lockdown order and its impact towards their lives. Having been completed the questionnaires to determine whether the stay-at-home order brings significant impact on daily life, the results of population show that being under such condition was associated to higher levels of anxiousness, monetary concern, along with feeling of desolation, in line with the hypothesized discouraging impact due to the stay-at-home order (35). We find a similar result to several studies from Greece, mentioning that lockdown during Covid19 outbreak resulted in large-scale abjection in 12.43% followed by grave distress in 13.46% (36).

Symptoms of anxiousness were evaluated using The Short Health Anxiety Inventory which has shown great reliability, internal consistency, and construct validity, consisting of 18-item self-report for the respondents to choose from (33). Such anxiousness could lead to the absence of asking for help behavior and in the long run, will likely affects to uncontrollable worries: fear of the unknown; uncertainty of what is to come. These questions determine an overall score, in which bigger numbers indicating higher level of health anxiety. Overall, variance in health anxiety is accumulated for 8% (33). Prior research in Turkey (37), has demonstrated 23.6% depression along with 45.1% anxiety. The total number accumulated as much as 8% of the health anxiousness variance (33).

Depression aspect was assessed using Depression Anxiety Stress Scales. The result accounts for 7% of the variance in depression symptom severity. However, this score did not account for any significant amount of unique variance (33).

Financial worry was analyzed using the Family Economic Strain Scale, using three items concerning the availability of future financial income. It is found that results make up about 14% of the variance in monetary insecurity (33). Income level is consequently associated with financial worry, in which people with lower income are at risk as they have fewer chances to secure healthcare treatments. In addition, the lockdown order has forced workers to stay at home, which eventually leaving them feeling anxious about their jobs' insecurity. In fact, this anxiousness has become a sad truth as millions of labors around the world in various workplaces have been cut off due to Covid19's impact on financial problems.

Another significant impact of Covid19 during lockdown status correlates to a person feeling lonely. This aspect was analyzed using the UCLA Loneliness Scale - Version 3. (33). Like the previous two symptoms, bigger numbers indicate higher level of loneliness and

it is found that this aspect makes up a 10% variance in loneliness (33).

Loneliness itself may be caused by the loss of family and loved ones. In the long run, it could lead to one person feeling helpless, hopeless, and a sense of grief due to great emotional loss, and the worst of all; suicidal ideations (36,38). In addition, loneliness may lead to alcohol abuse (33).

If put side by side, the least to the most impact from Covid19 along with the stay-at-home order status on mental health is as follows; depression (7%), health anxiety (8%), loneliness (10%), and financial worry (14%). It is mentioned that age or sex, however, does not influence these results. However, this result did not matched with a study conducted in university's students in Greece has found that female students were twice times higher to occur depression than male students (36). Therefore, a more updated research is required to reassess these results. Nevertheless, strategies like physical distancing and lockdowns should be prolonged in order to suppress the virus from approaching more population. Nevertheless, psychosocial interventions, take for example, physical distancing and nationwide lockdown, are crucial and needs to be applied in the long run in order to suppress the virus from spreading on a much more global scale.

The coronavirus itself, undeniably, has brought restlessness upon many people coming from various backgrounds. One of them is the members of academic institutions. We took notice of one study about psychosocial intervention affecting the mental health particularly on a unit of university students, academic staff and faculty members, specifically under the stay-at-home order status. This study was conducted by the Department of Psychology, University of Valladolid, Spain, in which the study involved a total of 3,707 participants.

The assessment method used in the study is similar to that of Tull's. Using DASS-21 and IES instruments respectively, university students (from undergraduate - PhD students), faculty members, and academic staff from different faculties mental health concerns are graphed in terms of depression, anxiety, stress levels, and then intrusion and avoidance subscale. After adjusting to multiple variables, students showed significant higher results in both anxiousness and depression in contrast to administrative staff and faculty members altogether. Such scores were found in Arts and History and Social Sciences and Law students, followed by Architecture and Engineering students. The results also showed that those taking Master degrees performed lower scores compared to that of undergraduate students. Consequently, academic staff and faculty members from the Arts and History students are compared to those in Architecture and Engineering.

The overall results show that 21.34% of the participants showed mild ranging to severe anxiety symptoms; 28.14% showed mild to extremely drastic stress symptoms, and lastly, 34.19% of them suffered from mild to extreme depression symptoms. All in all, 50.43% of the participants scored mild to extreme psychological after effects due to the virus outbreak and lockdown (IES≥26).

In conclusion, students who are taking Arts and History and Social Sciences and Law studies were more affected than students of different faculties, especially when compared to Architecture and Engineering students respectively. Even so, the exact finding proves the opposite result from another study, suggesting that students from Health Sciences or Engineering fields showed higher results of depression than those in Humanities field (39). It turns out that the lowest points of all three subscales were found in Arts and History students and staff. However, this research is limited because the assessment was only done within one university in Spain, that is the University of Valladolid (40). What is more is that the research was done last March 2020, so it was very early and further research might need to be conducted. Not to mention, there was a commotion and not closed to protests caused by Trump's administration policy to send back international students to their native countries, leading to greater frustration and stress. Therefore, mental health issue upon all members; university students, faculty members, and employees, should be given the same attention as everyone else. We think that severe symptoms during one's study shall affect his or her performance in the learning process, moreover under confinement.

CONCLUSION

Given the findings that we found, psychosocial interventions do affect a person's psychological health conditions. In difficult times like this, mental health disorders have increased significantly, such as; anxiety, depression, fear, financial worry, loneliness, mood swings, severe stress symptoms, sleep insomnia, and high prevalence of PTSD.

Such drastic changes are mainly caused by adjustment issue, where everyone needed to adjust to an all-new health protocol, such as lockdown and new lifestyles. For starters, there are; self isolation or self-quarantine, physical distancing (used to be known as social distancing), quarantine, and even nationwide lockdowns. All of these interventions issued by the government is to prevent the coronavirus from spreading

ever so quickly. On the contrary, little did we know that those interventions would also lead to unpleasant alterations on people's mental health state. In addition, upsurge on Covid19 results in social life crises, such as financial crisis and relationship issues.

Staying at home for a long period of time limits our interaction with other people, whom we used to interact often with, outdoors. Making people suffer from anxiety. Eventually, this anxiousness leaves people feeling isolated—cannot connect with other people. Although some people may be living under the same roof as their family members, spending too much time together only with the same people is also associated with anxiety as it may cause conflict. Not to mention, unhealthy lifestyles like sleep deprivation (which leads to poor sleep hygiene), gambling, and substance use due to depression and anxiety. These poor lifestyles give out changes in energy, irritability, or restlessness, and panic among those with chronic conditions.

The sudden adjustment and changes caused by this outbreak make people involuntarily "accept the fate", which eventually leads to depression; very limited outdoor activities with other people makes us questioning our existential purposes, people not only lost their jobs, but also their loved ones. People are drowned in deep grief suffering from such an emotional loss, having feelings of estrangement and separations. As a result, their hearts were pierced by loneliness, sadness, and even rejection, because of the stigma. Moreover, depression and loneliness are often associated with increased suicide risk.

The coronavirus is notoriously known to the mass for its capability to kill millions of people within a short amount of time. As a result, not a few people are afraid of its existence and builds up fear of getting infected or unknowingly transmit the virus. In the end, people felt insecure and isolate themselves. Changes caused by Covid19 also triggers other disorders, particularly in PTSD, intensification of gaming or cyber addiction, and not limited to brief psychotic disorder.

Most of the articles that we found did observations, interviews, and gave out questionnaires on children and university members. The only setback is that those studies were assessed during the early stages of the lockdowns and stay-at-home orders started. This, without a doubt, resulted in major evident results, specifically in anxiety, depression, fear, loneliness, and increased stress symptoms. Therefore, longer-term and more recent prospective studies are needed to re-evaluate these results.

Social interventions which are imposed limit the process of meeting the needs of human life. It is crucial to point out the latest psychological well-being of the population and take charge to diminish its adverse effects for the time being. Therefore, the Government needs to prolong the implementation of a strict and fair policy, especially on the issue of community survival. Public health protocol socialization needs to be done, especially in controlling the transmission of viruses in public places, such as malls, public transportations, schools, workplaces, and many other. We also hope that the Government could also provide treatment to those in need and enhance the competency of volunteers and health care professionals.

Therefore, to overcome these mental health problems resulted from Covid19 outbreak, citizens have to commit to dodge needless exposure to Covid19, such as reduce to leave the house, control a healthful diet and positive lifestyle, and keep in touch to other to encourage and sympathy that the situation will soon get better. Also, we can gain access to online counseling and psychotherapy via calls, texts, or even video conferences. If not, try reaching out to other people for psychosocial support. We believe no one is ever alone. We need to take into account that all this happens for a reason, both the Covid19 outbreak and the psychosocial interventions. In other words, we must become discipline and obey the health protocols.

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