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Challenges of pandemic disease and mental health concern in Ethiopia: A systematic review of literature

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Abstract

Several studies have been carried out on the epidemiological nature, and economic, social, and psychological effects of pandemic diseases. However, little literature has been attempted to comprehensively indicate the psychological challenges of pandemic diseases and strategies utilized to overcome the challenges in the Ethiopian context. Thus, the objective of this comprehensive review of the literature was to assess and organize the literature on the challenges of pandemic diseases in general and COVID-19 in particular, develop guidelines and seek out alternative solutions that have implications for Ethiopia and beyond. The literature has been organized on the history, worldwide challenges of pandemics, Behavioural responses and coping mechanisms, and opportunities motivated by COVID-19. Some criteria were set to review the most relevant local and international studies that are rigorous in design, adequate sample size, relevant sample selection procedures, and those which have used instruments with high validity and reliability. The findings from the literature indicated that there is a high incidence of psychological difficulties (fear, stress, anxiety, and depression) associated with COVID-19 worldwide and in Ethiopia. The problem is attributed to economic, social, psychological, and health-related outcomes of COVID-19 that demand integrated prevention and intervention strategies.

Keywords: Behavioural response, COVID-19, Ethiopia, mental health, pandemic disease.

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1. Introduction

The word “Pandemic” refers to a widespread of contagious disease in a region, a country or the whole world at a time that affects a large number of people [1,2]. This definition attests that pandemics are deadly diseases of international concern. Human beings have been affected by several unprecedented and shocking pandemics in their history that have resulted in high morbidity and mortality. Despite the erratic nature of disease emergence, there are lessons to be learned from the origins of recently emerged diseases as well as those that have their origins in the more distant past.

Thus, this review was designed to evaluate and borrow some vital experience from studies and documents on how to integrate mental healthcare service in the management of COVID-19.

This review article focuses on a brief historical inquiry of world pandemic diseases and research results on COVID-19 associated with mental health.

2. Methods and materials

International and national electronic documents were reviewed to develop guidelines to mitigate the psychological burden of COVID-19 in Ethiopia. While searching for relevant literature, the reviewer mainly used databases in Google scholar, Google search engines, and websites of different organizations. The keywords "coronavirus" and "pandemic disease," in reference to "psychological disorder" and intervention mechanisms were used in searching for relevant literature.

In searching for relevant literature, the following inclusion criteria were used:

1) Studies published from the year 2005 to 2020 in the electronic databases;
2) Studies published in English;
3) Studies that present psychological stressors during the outbreak of pandemic disease;
4) Studies that present historical overview of pandemic disease;
5) Studies that present the psychological health problems of pandemic diseases in general and COVID-19 in particular;
6) Studies and documents that present strategies and intervention options to mitigate the problem associated with the outbreak of pandemic diseases;
7) Studies that reflect the realities of mental health problems in Ethiopian; and
8) Studies that have standard authority, accuracy, and objectivity.

Though the literature includes studies from 2005 to 2020, to provide background information, a few pieces of work published before 2005 were reviewed.

3. A review of the literature in global and Ethiopian context

3.1 Historical overview of pandemic disease

Pandemics can both catastrophic and opportunities. Huremović [3], Saunders-Hastings and McLaughlin [4] and Dominique [5] identified many devastating pandemic outbreaks that distressed and demolished societies. Paradoxically, pandemics have contributed to advances in sciences and technology. Some of these pandemics were recorded in religious scriptures (Bible and Quran) that largely considered being "Divine punishment for sins". According to Huremović [3], the major documented pandemic diseasesin human history include the Athenian Pandemic (430–26 B.C), Antonine Pandemic (165–180 AD), the Justinian Pandemic in 541 AD, the Black Death in 1334 and influenza which appeared in 1650 in the scientific literature. He also identified Smallpox, "Spanish Flu" (called Yehedar Besheta in Ethiopia) (1918–1920), Asian flu which befell between 1957 and 1958, and Hong Kong Flu that arose from 1968 to 1970). More recently, there were spread of HIV (started in early 1980s), Severe Acute Respiratory Syndrome (SARS) (started in 2003), the Middle East respiratory syndrome (MERS), and "Swine Flu" (2009–2010). The most recent pandemics were Ebola (2014–2016), ZIKA (2015–2016), and COVID-19. Added to these pandemics are cholera, dengue, West Nile disease, and tuberculosis.

Most of these pandemics were originated in different countries (at least two of them were claimed to be originated in Ethiopia - Athenian and Justinian Plagues) and spread throughout the world due to human demographics and Behaviour, and land uses economic development, international travel and commerce, technology and industry and the failure of public health measures. Circulating strain and seasonal outbreaks of some of these pandemics are common.

Causatives to these pandemics were infections or viruses that negatively affected the physical and mental health of persons. Most of these pandemics were causing widespread illness, death, and disruption, and claimed tens of thousands to millions of lives. For example, Ross *et al* [6] noted that 'Black Death' killed 50% of European population. Spanish flu in 1919-1920 caused approximately 500 million infections and nearly 50 million deaths in Europe [7] and estimated to have killed one-third of world people [8].

Asian flu and Hong Kong flu have killed about 2 million and 1 million people respectively [9]. Pankhurst [10] in his historical writing designated that the two documented devastating outbreaks of influenza in Ethiopia were in 1706 and 1748. The most summon up pandemic disease was the Spanish Flu [11]. It has killed about 60,000 people in the country including priests, educated, national leaders, and medical professionals. In memory of this devastating pandemic disease, each year on the 12th of Hedar (21 November), people collect all rubbishes in and around home, and burn. Besides claiming millions of lives, these pandemics have caused immeasurable social, economic, psychological impacts [12].

Focusing on COVID-19, United Nations Economic Commission for Africa (2020)[13] estimated anywhere between 300,000 and 3.3 million African people (where Ethiopia is a part) could lose their lives. However, the magnitude of damage depends on the preparation and intervention actions to stop the spread. Overcrowded and poorly serviced slum dwellings in urban areas, unemployment, weak economies, food shortage, lower ratios of hospital beds, and health professionals (including mental health professionals) to its population make the continent of Africa more vulnerable. Internal displacement, an increasing number of refugees, and cross border mobility will worsen the situation [14]. Thus, this outbreak makes scientists and governments worry about a repeat of the devastation of, for example, the Spanish flu of 1918 [15].

Despite their devastating effect, pandemics contributed to creativity, innovation, and technological development. There is also a critical need to establish a strong responsive health system to both physical and mental health demands associated with the outbreak. However, the SARS and the Swine Flu pandemic outbreaks were among the first acute outbreaks that had mental health aspects were

seriously studied. Even in China, who was the first victim of COVID-19, psychological interventions have not been included into public health plans and readiness [16]. A severe shortage of mental healthcare providers in the country worsens the situation.

Similarly, despite there are about 22,000,000 people living with mental health problem in Ethiopia, scarce attention was given to it in terms of policy, awareness raising, facilities and trained professionals [17]. These mental health problems are pervasive during the outbreak of COVID-19. However, the Federal Ministry of Health (FMOH) [18](2020) in its National Comprehensive Covid-19 Management Handbook and the Ethiopia COVID-19 Emergency Response Project (2020) failed to give adequate attention to the mental health aspect (the need for Behavioural change) which is equally important as medical treatment. Virtually, focus was given to the spread, medical features, and controlling of COVID-19 pneumonia [19]. The mental health aspect of suspected patients confirmed patients and the wider community frustrated by the outbreak of COVID-19 were not given sufficient attention.

3.2 Mental health impact of COVID-19 on patients and at-risk population

COVID-19 was emerged in China, Wuhan, Hubei Province, in early 2020. World Health Organization declared the outbreak of COVID-19 as a "public health emergency of international concern" in January 2020. After the declaration, people around the world are increasingly facing mental health issues that can impede infection control. The unclear incubation period of the virus and the possibility to contract the virus from a person who has no symptom have instigated more psychological distress. Quarantine measures, and "infodemic" further posed psychological distresses. Correspondingly, there are other terrible situations facing people such as fear of stigmatization and social isolation and worry about going to public spaces. From a survey of 7,236 self-selected individuals in China, Huang and Zhao (2020) [20] found that the main psychological distresses associated with COVID-19 are generalized anxiety disorder (GAD), depression, and insomnia. It is reported that GAD and depressive symptoms are more prevalent among young people than older people.

Qiu *et al*.[21] in their first large- scale nationwide survey with 52,730 (M=18, 599 and F=34 131) have found that 35% of the respondents experienced psychological distress. Psychological distress found to increase with level of education may be because of their high self – awareness of their health. Risk of being infected and infecting others, loss of life, rapid changes to the way of life, and disrupted plans worsen the psychological distress created by COVID-19. Similarly, Li *et al*. [22] (2020) from the review of the literature identified that COVID-19 resulted in great psychological pressure and other health-related problems. Some of the psychological pressures are experiencing fear of severe disease consequences and the contagion, obsessive-compulsive symptoms, loneliness, denial, insomnia, and despair. Some of these cases may even have an increased risk of aggression and suicide. The public at large may also experience boredom, disappointment, and irritability under the isolation and pressure to stay-at-home measures.

A study conducted in Sri Lanka by Ellepola and Rajapakse (2020)[23] showed that conditions such as depression, anxiety, grief, substance-related disorders, insomnia, avoidance Behaviour, vigilant hand washing, and psychosis are more prevalent during COVID-19 outbreak. Xenophobia, infodemics, stigma, and the addition of newer psychopathology complicated the picture. Shojaei and Masoumi (2020) [24] from the context of Iran highlighted that the most common psychological distress during COVID-19 epidemic are confusion, fear of infection, hopelessness, and boredom.

3.3 Behavioural response to COVID-19

COVID-19 spreads faster than its two ancestors the SARS and MERS but has lower mortality. However, the global impact of COVID-19 is not yet certain. When the first case was reported in Ethiopia in March 2020, everybody was panic and there was a sense of confusion, denial, and uncertainty. Previously, among the majority of people, there was a hope that it will not spread to Ethiopia for a variety of reasons. Some associate the spread of this pandemic disease with the eating culture, some associate it with "Divine punishment for sins", some associate with the climatic condition, and some thinking that the pandemic infects a particular race. Such uncertainty led to vacillation in feelings and disregarding the direction given by health authorities and the government. As the international and local situation was getting most awful, case reports increased at an alarming rate(more than 7 million cases and more than 400, 000 deaths worldwide, and more than 2000cases and 27 deaths in Ethiopia at the time of this review) most people started to feel that this pandemic disease is at the get of everybody's home. Though the degree varies from individual to individual, the largest proportion of the community was frustrated by the spread of COVID-19 that resulted in general public panic, fear, stress, anxiety, and depression.

As the situation was getting nastiest, following its approval by the Council of Ministers, Proclamation 3/2020, the House of Peoples' Representatives in its assembly on 10 April 2020 endorsed the state of emergency to control the spread of COVID-19 and curtailits impact. Following the declaration, different committees and command posts were

established both at the national and local levels. Subsequently, guidelines were prepared, quarantine centers and hospitals were identified, awareness creation and COVID-19 focused training was given. In the course of these actions, the worst situation encountered, and good practices and experiences in other countries served as eye-openers. Though worries increased it came with options to protect oneself from the pandemic (frequent hand washing, staying at home, using a mask, social distancing, etc.). Thus, despite some insistence on maintaining the previous ways of life, especially, by youngsters, people started to give more attention and value to the direction given by the government and begin to strictly follow procedures recommended by the health institutions. Consequently, police and other law enforcement bodies started to take very strict corrective measures. Despite corrective measures executed and change in awareness level, over time, long time quarantine, movement restriction, and economic decline there appeared to be a sense of boredom, fade up, and indifference. These conditions may lead the government to loosen some mobility restrictions that can contribute to the second wave of the pandemic. This situation can be followed by strict implementation of laws in a state of emergency, envisage future incidences, resurrecting, and finally making a new adjustment.

There are also some commonly shared behavioural responses to COVID-19 by Ethiopian people, which are similar to the international community. These shared reactions to stress are physical, emotional, behavioural, and cognitive reactions [25]. Physical reactions include somatic disorder, insomnia, exhaustion and the whole physiological disturbance. Emotional reactions range from loss of interest in usually enjoyable activities and feeling helplessness to anxiety and depression. Behavioural reactions comprise increased substance abuse, harassment, and ignoring public health and safety recommendations. Cognitive reactions contain confusion and inability to think clearly. Cullen *et al* (2020) [26] also identified that psychological reactions to pandemics include maladaptive behaviours, emotional distress, and defensive responses.

Reviewing studies Brooks *et al*.[27] has established that features such as avoidance Behaviour (avoidance of crowds, people who were coughing and sneezing, enclosed spaces, public spaces), vigilant hand washing, not reporting to work and deterioration of work performance are common during the spread of COVID-19. According to these authors, tobacco, drugs and alcohol abuse or dependence, anxiety symptoms, feeling of anger, exhaustion and irritability, insomnia, symptoms of depression, symptoms of acute stress disorder and PTSD are also a common behavioural reaction to COVID-19. The other commonly mentioned behavioural responses to COVID-19 are hoarding medical supplies and food items, more than usual prayer and religious practices, a sense of incorporation and humanity, developing a sense of mistrust/suspicion, decreased local and international mobility, and shaving at home rather than going to the barbers.

3.4 Opportunities motivated by COVID-19

Besides their devastating effects, pandemics bring some opportunities with them. Pandemics allow exercising a new way of life: socially, psychologically, and economically. Socially, it contributes to altruism, more cooperation and unity. Psychologically, it alerts the concerned body to focus more on psychological wellbeing that facilitates the management of COVID-19. Economically, it initiates new ways of tackling economic problems and motivate to re-engineer the existing economic system that sustain economic development. In a survey of 4872 participants of Chinese citizens' aged≥18 years old, Gao *et al*. [28] have found some opportunities associated with COVID-19 outbreak. Attention given to mental health, a more use of ICT and online consultation, and monitoring/filtering out "infodemic" are some of the positive outcomes of COVID-19.

Some of the remaining commonly alluded opportunities with COVID-19 include more attention given to creativity and innovation, use of technology, increased use of mobile banking and e-commerce, enhanced saving culture for a time of hardship, and more attention is given to religion and spirituality. The development of a more advanced digital contact tracing system integrated medical and mental health facility, minimized environmental pollution and accidents, and more attention given to traditional medicines that have modern significance are the other opportunities that have been procured with COVID-19.

3.5 Coping mechanisms with psychological problems associated with COVID-19

Some of the adaptive behaviours to COVID-19 are practicing good hygiene, self-isolation, and social (physical) distancing. Shifting thinking from catastrophizing to a more helpful mind set and channelling emotions into something creative, meditation, exercises, working from home are the other adaptive behaviours. Staying connected and receiving support and care from family, friends, and others through calls, text, or video-chat can be a remedy too. Finally, seeking accurate information from reputable government sources and setting limits around news and social media are crucial [19].

From the experts 'explanation, the World Economic Forum [29] identified some way outs on how to manage mental wellbeing during COVID-19. One of these solutions is implementing the same practices as we would

on any other day (before the crisis), for example, waking up, making our bed, showering, shaving, eating our breakfast, etc. Anxiety can also be reduced by reducing risk by practicing good hygiene and monitoring our worry to optimal.

4. Lesson learned from the reviewed literature and some guidelines to mitigate the psychological burden of COVID-19

Pandemic diseases are worrisome and deadly public health problems that usually claim millions of lives. The magnitude of price to be paid largely depends on the extent of government health policy, preparation, awareness, and rate of public response. Strategic approaches are needed to meritoriously tackle the economic, social, medical, and mental health effects of COVID-19. Thus, based on the literature reviewed and lessons learned, the following guiding principles may help to establish a relevant model and provide some courses of action to mitigate the psychological burden of COVID-19 in Ethiopia.

1) No one should choose prevention or intervention and treatment approach without careful clients' assessment and adequate information about personal (age, sex, culture, educational level, occupation, and economic background) and environmental factors under the guidance of competent professionals;
2) Understanding the multiple effects of COVID-19 including, but not limited to, psychological, social, economic, and health effects;
3) Understanding the fact that more than one intervention approach can fit for different individuals, and also that an individual may demand a mix of approaches for the same problem;
4) Remembering that protection and treatment of psychological problems are continuous, sometimes require a long process and that it is the result of a combination of interacting determinants;
5) Inform individuals to use past effective experiences in handling similar problems besides establishing peer support system through exposure to individuals who have experienced the same problems and solved related problems;
6) Focusing on the process of prevention and treatment, as much as on the outcome, because, in the process, personal growth occurs that might benefit the individual;
7) The government and health organizations should promote and offer social and psychological support, ensure secure electronic information-sharing platforms and promote telepsychiatry and telemedicine, psychological counseling and promote legal information regularly;
8) Understanding the multiplicity of personal and environmental influences, ranging from the micro-level (family) to the macro-level (the wider community and government). There is a need to establish large scale community engagement for social and behavioural change. Nationwide integrated strategic planning and coordination and targeted intervention are needed to reduce psychological distress;
9) Ministry of Health needs to effectively integrate medical and mental health system, modify health provision system to accommodate individuals affected by COVID-19, provide life skills education, stress management techniques and provide behavioural therapy for those persons who exhibit signs of mental disorders;
10) Pay attention to vulnerable groups such as the young, the elderly, women and migrant workers;
11) Train the general population that they are not immune from the consequences of their irresponsible actions (ignoring directions and procedures given by the government and health organizations) and on how to use a face mask and other safety rules. The community need to also know laws and the penalties for various violations during the state of emergency;
12) Make strict follow up on persons suspected of and those who might have contact with individuals at risk of COVID-19 for possible health and psychological problems, and rehabilitation;
13) Systematically establish community information and feedback mechanisms including social media monitoring, community perception, knowledge, attitude and practice survey; and direct dialogue and consultations;
14) As a comprehensive intervention, conducting situational analysis and assessment, develop and enforce emergency policy and enforce local, regional, and federal laws to respond to a specific emergency as Ethiopia doesn't have a strong policy regarding mental health and such unexpected pandemic outbreaks.

5. Conclusion

Throughout human history, there have been several crises related to pandemic diseases. Pandemic diseases including COVID-19 have caused enormous negative impacts on health, economy, social, and mental health. COVID-19 is a test of time and has caused innumerable psychological difficulties including fear, stress, anxiety, and depression. People reacted to these difficulties in diverse adaptive behaviours containing physical, emotional, behavioural, and cognitive reactions. Along with these problems, there are needs for educating individuals with desirable life skills and adaptive

behaviours to mitigate the psychological burden of COVID-19 that require the involvement of government and health organizations. This review will also provide some background information for researchers who are interested in psychological disorders related to COVID-19 in Ethiopian context and beyond.

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