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OPINION ARTICLE

Mental Health and Physical Activity: A COVID-19 Viewpoint

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Abstract:

COVID-19, which has been declared a pandemic by the World Health Organisation, has become a public health emergency across the globe. It is a highly contagious disease, which elicits high levels of fear amongst the world population and is considered a threat to the world economy. As a response to this pandemic, international governments have devised unconventional measures to guard the health of their citizenry. Among these are the "new normal" country lockdown that mandates working from home, home-schooling of children, and physical/social distancing from friends and family. For the majority, this has resulted in momentary job loss and loneliness, and other psychological illnesses. Hence millions are frightened, depressed and panic easily as a result of the tension due to the uncertainty, which interferes with their job performance, livelihoods, international trade and the world economy. If not mitigated, this is likely to cause physical health deterioration, with severe mental illness being the outcome. To reduce mental health illnesses during and after the COVID-19 pandemic, evidence suggests prioritising regular participation in physical activity and exercise across lifespan. It is also important for medical experts who specialise in the care and management of mental health to recognise physical activity and exercise as a medicine that can ameliorate some mental illnesses and their associated risk factors.

Keywords: COVID-19, Mental health, Physical activity and exercise, Well-being, LMIC, Africa.

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1. BACKGROUND

Mental health can be understood as a "state of well-being in which an individual realises that his or her abilities can cope with the normal stresses of life, work productively, and make a contribution to his or her community" [1]. Legg and Newman [1] further stated that circumstances, such as stress, depression, and anxiety could have a negative consequence on one's mental health and interrupt individual daily activities. Mental illness has been categorised into two conditions: (1) Any Mental Illness (AMI) (all known as mental illnesses) and Serious Mental illness (SMI) (a smaller and more severe subset) [2]. In Geneva, on the 4th of October 2001, the World Health Organisation (WHO) reported that globally, 1 in 4 individuals could experience mental or neural ailments at a particular stage of their existence [3]. It was then estimated that about 450 million people were suffering from mental disorders and were among the leading causes of infirmity and frailty throughout the globe [3]. In 2017, the global estimates of people living with AMI were 792 million, which is more than one in ten persons [2].

In low-income and middle-income (LMIC) countries, especially in Africa, mental health problems are seen as the noiseless predicament that is not considered a main concern [4]. However, the dearth of information in the area of mental health problems places many African countries in a vulnerable state. This is compounded by the shortage of medical experts and other professionals who specialise in the management of this illness. For example, Sankoh *et al*. [5] reported a huge shortage in the number of mental health workers, especially psychiatrists, hospital beds for mental illness patients, outpatient amenities coverage, and mental health-related policies when compared with the other regions of the world. On the other hand, the inability to access primary health care by many, due to the overwhelming health care system, insufficient funding, poor health care infrastructure, inequities as well as the lack of health experts and medical personnel [6], has also been reported as a factor mitigating against the primary health care system. At this time of COVID-19, the mental health consequences of lockdown, coupled with social or physical distancing, and the inability to perform daily routines, could increase the number of people with mental illnesses with no or limited access to health care and community support [7].

Social or physical distancing is one of the strict actions to

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separate many individuals from decelerating the spread of the coronavirus pandemic but has a toll on many individuals' mental health. Studies have shown that daily social disconnections could negatively impact one's mental health [8 - 11]. Therefore, an enlightening program to create alertness, prevention, care, and treatment for a variety of mental conditions is a necessity [12].

Despite the existence of mental disorders across the board, a difference exists as to its occurrences [13, 14]. However, social factors have been implicated as contributing factors [13]. Data from some high-income and LMIC countries have revealed a tremendous increase in mental illness due to certain highlighted social factors. Some of these factors include poverty or poor earnings, no or low education level, unemployment, debt, and food insecurity [13]. The situation is further aggravated by the current spread of COVID-19 and the protective measures established by various governments. Consequently, the negative impact of mental sickness could cripple an individual's ability for efficiency and sustainability [13], most especially during this COVID-19 pandemic. For example, in the recent large-scale COVID-19 democracy survey [15], it has been shown that 33%, 45%, and 29% of South African adults respectively have either been depressed, scared, or felt isolated since the implementation of the country's lockdown [16]. Similarly, early on in the COVID-19 epidemic, Galea et al. [17] also projected that there could be a substantial increase in anxiety, depression, and substance use and abuse among people, and possibly leading to increase in child abuse and domestic violence. In addition, the negative effect of the COVID-19 pandemic is generating disorder, distress, nervousness, and pressure among persons [18 - 21] and could negatively influence reasoning and neural functioning [18 - 19].

Since the onset of the pandemic, social media has become an important source of information for many people, especially in Africa, but not all of this information is reliable, further adding to the anxiety and spread of fear and panic about the outbreak [18]. A few social media companies have tried to prevent its dissemination on their platforms, but not all of it has been eradicated.

Studies have shown that regular physical activity and exercise participation is often an ignored intervention in mental health maintenance [22, 23]. Physical activity could be understood "as any bodily movement produced by skeletal muscles that result in energy expenditure assessed in kilocalories, while exercise is a subdivision of physical activity that is planned, structured, and repetitive and as a transition to improve or maintain physical fitness [24]. Whereas physical fitness is the ability to carry out daily tasks with vitality and alertness, without tiredness, and still have plenty of energy to recreate and overcome unanticipated predicaments [24]. Physical inactivity, is currently the fourth leading risk factors for death worldwidely [25]. Among these risk factors are obesity, hypertension, hyperlipidaemia, cardiovascular diseases, and mental illnesses. Sharma *et al*. [22] emphasize lifestyle modification, especially engaging in physical activity and exercise, as a mandatory strategy to prevent the aforementioned risk factors for death.

There is also substantiated evidence to suggest that moderate physical activity, such as walking for pleasure and leisure-time physical activity, alleviate some symptoms associated with mild to moderate mental health issues, especially depression [26, 27]. Individuals who suffer from stress tend to resort to overeating and using psychoactive drugs such as alcohol and cigarettes [28]. These authors suggest that engaging in physical activity and exercise could be used as an adjunct program to prevent alcoholism, as well as food and substance abuse. In fact, in their letter to the editor, Sharma *et al*. [22] stated that engaging in physical activities such as dancing, jogging, swimming, and cycling seems to have health benefits in that they improve mental health through a couple of mechanisms, namely: i) improving sleeping pattern; ii) improving mood; iii) managing stress or depression; iv) improving self-esteem and social skills, whereby being more active enhance weight loss, and if doing group or team activities, it increases a possibility of meeting new friends and like-minded people. Moreover, among other recommendations, tip number two of the basic psychosocial skills guide by the Inter-Agency Standing Committee [29] urges people to eat well, get enough sleep, and engage in regular physical activity and exercise.

Regular participation in physical activity or exercise has been shown to improve an individual's total well-being and is regarded as a potent natural remedy for several popular mental illnesses, such as depression, anxiety, attention deficit hyperactivity disorder, stress, post-traumatic stress disorder, memory, thinking, self-esteem, increase energy, resilience, better sleep, mood, boost the immune system, and lower the influence of stress [22, 26, 30 - 32]. Physical activity and exercise coupled with other treatment modalities to prevent and manage mental health conditions seem to be more effective [33], with evidence for the positive effects of physical activity on mental health steadily growing [34].

The WHO physical activity recommendations were to promote and maintain health by engaging in physical activity for at least 150 minutes of moderate-intensity aerobic physical activity, or at least 75 minutes of vigorous-intensity aerobic physical activity or an equivalent combination of moderate - and vigorous-intensity activity throughout the week [34]. Any individual who wants extra health benefits and is already exercising regularly should increase their moderate-intensity aerobic physical activity to 300 minutes per week, or engage in 150 minutes of vigorous-intensity aerobic physical activity per week, or an equivalent combination of moderate- and vigorous-intensity activity. Besides, muscle-strengthening activities, involving major muscle groups should also be performed on two or more days per week. Even a small spurt of 10 minutes of quick walking, done regularly, could improve mental readiness, vitality, frame of mind status and quality of life [32]. It is advised that those who have not previously engaged in physical activity or are inactive should slowly increase duration, frequency, and intensity (in that order) over time [34]. However, before anyone begins an exercise program, they should first consult their doctor to ensure it is safe to do so.

Aerobic exercises such as brisk walk, cycling, swimming, and running are some of the exercises that help the blood to

circulate to all parts of the body [35]. These types of exercises could improve individual heart rates and reduce the risk of cardiovascular disease, type 2 diabetes, high blood pressure, and protect against the risk of cancer [36]. Other types of exercises include strength exercises or resistance exercises such as weight lifting, push-ups, and crunches to improve lean muscle mass for bodyweight loss; balance exercise that could assist individual capacity to regulate and stabilise the location of the body; flexibility or stretching exercises that could improve individual range of motion and lower the risk of injuries [36]. Also beneficial would be yoga and pilates exercises, all team and individual sports [37]. In Sharma and colleague's [22] letters to the editor in 2006, they reiterated that aerobic exercise could lower anxiety and depression and improve mood. The effect of consistent participation in physical activity and adherence among psychiatric patients has been shown to be similar to that in normal individuals. However, physical activity and exercise have also been found to improve schizophrenia by improving fitness levels, exercise tolerance, perceived energy, handgrip strength, lowering body weight, and blood pressure levels [22].

CONCLUSION

To reduce mental health illnesses, especially during the current lockdown and after the COVID-19 pandemic and beyond, participation in physical activity and exercise should be prioritised for people of all age groups [6]. It is also important for medical experts specialising in the care and management of mental health, to recognise physical activity and exercise as a prescribed medicine, which can be performed to ameliorate some mental illnesses and their risk factors. Physical activity could also serve as a protective measure against weight gain and psycho-physiological difficulties. Most importantly, the integration of dose-response of physical activity and exercise coupled with adherence is the key to a successful clinical practice. Physical activity and exercise prescription like medication in clinical practice, should be followed based on the three elements of intensity, duration, and frequency [38]. Besides government assistance and guidelines [19], Non-Governmental Organisations (NGOs), mental health associations, public health, and exercise or physical activity experts and educators therefore need to create awareness, educate, and support all individuals.

LIST OF ABBREVIATIONS

COVID-19	=	Coronavirus Disease
WHO	=	World Health Organisation
LMIC	=	Low-Income and Middle-Income Countries
AMI	=	Any Mental Illness
SMI	=	Serious Mental Illness
NGO	=	Non-Governmental Organisation

CONSENT FOR PUBLICATION

Not applicable.

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CONFLICT OF INTEREST

The author declares no conflict of interest, financial or otherwise.

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