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Risk Factors and Effects of the Morbus: COVID-19 through the Biopsychosocial Model and Ecological Systems Approach to Social Work Practice

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ABSTRACT

Utilizing the biopsychosocial model and the ecological systems theory, this disquisition explores on the risk factors associated with the COVID-19 pandemic. The discourse shows the interconnectedness of biological, psychological, and social domains in expatiating on the COVID-19 pandemic. It calls for the need to strengthen the resilience of the global community in the face of health outbreaks such as COVID-19. It emphasizes on the perspectives that pandemics are managed before they emerge through building systems that are resilient. Thus, it appreciates the need for a therapeutic milieu as a building block to resilience. The article calls for the adoption of a developmental stance to analyzing health outbreaks and clinical issues. The adumbration shows the reciprocity effects of the health outbreak [*macrocosms*] and individual factors [*microcosms*]. To its end, the paper implies that COVID-19 is a call for integration toward effective health planning between social policy formulators, urban and rural planners, epidemiologists, development practitioners, clinicians, researchers to mention but a few. Ultimately, the paper calls for social workers to consider a developmental-clinical social work approach which helps foster “health in all policies” so as to build resilience against the morbus and limit the proliferation of diseases.

KEYWORDS

COVID-19; biopsychosocial model; ecological systems theory; social inequalities; reciprocity

Health outbreaks are frequently occurring in this global community. The devastating Coronavirus (2019-nCov, or COVID-19) outbreak started in Wuhan China at the end of 2019 and has spread throughout the world (Brown & Wang, 2020). We are in the midst of a pandemic, with cities and even entire countries shutting down (Amin, 2020). Coronavirus epidemics thrive on socio-economic inequalities and poor health systems (African Union & African Centres for Disease Control and Prevention, 2020; Bennett & Carney, 2015). The pandemic has affected people of all nations, continents, races, and socioeconomic groups (Shanafelt, Ripp, & Trockel, 2020). It is evident that socio-economic determinants such as poverty, high crime neighborhoods, poor access to healthy foods, limited education and skill level, and high unemployment [*macrocosms* and *mesocosms*] adversely affect health and increases chances of one being infected by the virus [*microcosms*] (Krouse, 2020).

The fast-moving global COVID-19 pandemic caught many countries unprepared and has exposed several flaws including social inequities in global health, public health, economic and social welfare institutions (Henrickson, 2020; Lingham & Sapkal, 2020). Furthermore, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) highlights the most affected are the older persons, people with disabilities, people with comorbidities, people with mental health and psychosocial needs, women, children and youth, displaced persons, refugees, asylum seekers, and migrant, and people who have lost their sources of income (OCHA, 2020). Emphasis is that cases with weakened or

compromised immune systems—for example, the elderly, those with preexisting conditions such as diabetes, cancer, hypertension, digestive diseases, and respiratory diseases are more susceptible to COVID-19 (Mao et al., 2020; Rahimi & Abadi, 2020).

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a positive-sense RNA virus and the causative agent of coronavirus disease 2019 (COVID-19) (eGordon et al., 2020). The virus is transmitted from one person to another via droplets coughed or exhaled by infected persons and by touching droplet-contaminated surfaces and objects and then touching the eyes, nose, or mouth (European Centre for Disease Prevention and Control, 2020). Tuberculosis, rabies, malaras, salmonella, and a variety of corona viruses have been shuttling back and forth between humans and animals for years. While the COVID-19 pandemic is a novel situation, what is happening draws on both biological and social human histories, of ancient and recent times (Fuentes, 2020).

The 2019 Coronavirus has been examined through the lenses of culture (Banks, 2020), social policy issues (Rogers & Power, 2020; Wasdani & Prasad, 2020), mental health, and psychology (Amin, 2020; Byrne & Wykes, 2020;Vigo et al., 2020) among others. The impact of Covid-19 on global and continental economies has been elaborated (African Union, 2020; Kanupriya, 2020; United Nations Economic Commission for Africa, 2020). The hidden vulnerability of homelessness in the COVID-19 pandemic has been considered (Banerjee & Bhattacharya, 2020). Those admitted in mental health institutions are at increased risk of infection when admitted in the psychiatric inpatient (Zhu et al., 2020 cited in Vigo et al., 2020). Many of the people who are significantly affected by the pandemic are those who already face enormous challenges in a daily struggle to survive (United Nations, 2020) – illustrating some vicissitudes of the morbus. It is in this background that I consider utilizing the biopsychosocial model of Engel (1977) in exploring the clinical and developmental predispositions and implications of COVID-19.

Conceptualizing the biopsychosocial model and ecological systems thinking

The biopsychosocial model (Engel, 1977) is an interdisciplinary and multifaceted model that posits the interrelations among the biological, psychological, and socio-environmental influences on health and disease (Frazier, 2020). The biopsychosocial model is a theoretical framework which is highly applicable in clinical social work and other social sciences (Harkness, 2011; Ragesh, Hamza, & Kyn, 2015). The model specifically relates to social work because the profession is inherently concerned with the person (biological and psychological factors) in the environment (social) perspective. Dynamic interpersonal, biological, and psychological systems interact with contextual factors to shape health over life span (Lehman, David, & Gruber, 2017). The biopsychosocial model to health and disease posits the assumption that illness is not exclusively the disorder occurring at cellular, tissue, and organ levels, but rather the state of the organism as a whole with equally important effects of biological, psychological, and social factors (Havelka, Lucanin, & Lucanin, 2008). The virus SARS-CoV-2 is a biological entity, and COVID-19 is characterized by significant morbidity and mortality related to disruption of and damage to human biological systems among other areas such that it is imperative to appreciate the psychosocial and anthropological context of the pandemic (Fuentes, 2020).

The biopsychosocial model can help explain why people with the same diagnosis respond to treatment differently due to the varying biological, psychological, and social circumstances (Borrell-Carrio, Suchman, & Epstein, 2004). These factors can determine the progression of disease, predispositions, recovery, and also even the risk level of infection. The biological, psychological, and social factors are reciprocally interrelated. The biological factors relate to genetics, diet, and physiology while psychological factors refer to the emotions, cognitive functioning, attitudes, substance abuse and addiction, anxiety, and depression (Lehman et al., 2017). The social factors in this context will refer to issues to do with socio-economic statuses, housing, employment, social support, cultural practices, social disorganization theories, policies, laws, and other interrelation factors.

Social work is also rooted in the ecological systems thinking (Tosone, 2004). The ecological systems theory was formulated by Uri Bronfenbrenner (1979, 1989) and illustrates that human behavior, development, and socialization is influenced by different circles of the environment which include the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. The microsystem involves the intrapersonal and close interpersonal environment of the person under study including the home area and family members. The mesosystem is a system of microsystems which shows the interrelatedness of community resource systems such as schools, churches, shopping area, and work. The exosystem will refer to the systems that indirectly affect an individual, for example, the workplace of parents in the case of a child. The macrosystem consists of a broader social context which involves culture, national programmes, global issues, and social policies. Given the magnitude of the pandemic, the ecological systems approach becomes vital in exploring both clinical and developmental social work interventions. This article will not focus on the chronosystem due to space and time as this will be considered on a separate paper altogether.

Biological factors

Whereas there are several biological factors increasing the risks of coronavirus infection and its mortality rate, this section will only explore on only five factors: the physiological comorbidities, aging, physical exercises, nutrition, and sex.

Physiological comorbidities

People living with tuberculosis and tuberculosis survivors [*microcosms*] are likely to be at high risk of the coronavirus and are associated with adverse outcomes due to chronic lung damage (Datta & Evans, 2019 cited in Saunders & Evans, 2020). As mentioned before, diseases such as cancer, diabetes, lung diseases and liver problems increase mortality rates [*macrocosms*] associated to the pandemic. In the United Kingdom, Mills (2020) highlights that individuals [*microcosms*] are especially advised to isolate themselves at home to be “shielded” from COVID-19 if they;

- Have specific cancers;
- Have severe respiratory conditions;
- Have rare diseases that increase risk of infection;
- Are pregnant and have congenital heart disease;
- Have had an organ transplant and remain on long term immune suppression therapy.

The United Kingdom Government announced this to shield 1.5 million “extremely vulnerable” people in England with underlying conditions (Banerjee et al., 2020). Thus, it implies the fight against comorbidities enhances the projective lowering of the disease burden and mortality rates of a pandemic such as COVID-19. It is intrinsically relevant for the global health community to invest in health systems and interventions that build greater resilience of the population by lowering the prevalence of these diseases in the future.

Studies show that the poor and working poor are most vulnerable to COVID-19 because they are more likely to have underlying health conditions like hypertension, cardiovascular diseases, cancer, hepatitis B, and diabetes (Chen et al., 2020). Adults who are living in poverty are at increased risks of several health problems such as cardiovascular diseases, depression, diabetes, cancer, disability, and substance abuse (Harrison & Taren, 2018; Pratt & Broody, 2014). The Sustainable Development Goals also emphasize on the eradication of extreme poverty which is implicated in exacerbating the disease burden of the comorbidities that are further complicating the pandemic. Global and national efforts to eradicate poverty [*macrocosms*] should be enforced to ensure resilience of communities [*mesocosms*], individuals and families [*microcosms*] before, during, and after health outbreaks and natural disasters. Hence, the eradication of extreme poverty will go a long way in lessening the disease burden in future outbreaks.

It is estimated that, globally, four million people die prematurely from chronic respiratory diseases annually; pneumonia kills millions of people each year and is the leading cause of death among under five children; each year 1.4 million die of tuberculosis; and lung cancer which is the deadliest cancer kills about 1.6 million people per year (Forum of International Respiratory Societies, 2017 cited in Paul, Brown, & Ridde, 2020). COVID-19 certainly adds fuel to an already burning veldfire to which it exposes. These diseases also antagonize the efforts to curb the mortality rates associated with COVID-19. Recent data from Italy show that 60% of COVID-19 deaths occurred in people within three or more comorbidities, mainly hypertension (69%), type-2 diabetes (32%), chronic renal failure (21%) and ischemic heart disease (27%) (National Health Institute, 2020 cited in Michelozzi et al., 2020). However, it has been stated that the world's leading causes of death today (heart disease, stroke, and chronic obstructive pulmonary diseases) [*macrocosms*] are preventable through lifestyle changes [*microcosms*] (Frazier, 2020). Inasmuch as poverty is the key issue to address, people need to live a healthy lifestyle that emphasize on exercising, taking nutritional meals, and also in a therapeutic milieu which fosters resilience in the face of adversity.

It is pivotal to highlight how substance abuse has indirectly [*exocosms*] affected the disease burden and mortality rate of COVID-19 pandemic [*macrocosms*]. There is substantial evidence linking substance abuse to cancer, liver disease, and cardiovascular diseases (CVDs) (Comer, 2013; Lopez et al., 2014; Parry, Patra, & Rehm, 2011). People who use substances are at a greater risk of COVID-19 and its complications (Farhoudian et al., 2020). Social workers engage in community awareness initiatives, motivational interviewing, social policy formulation, and also treatment planning essential for both the management and prevention of substance abuse. There is a great need for collaboration with other health-care providers in the fight against substance abuse which has been implicated in non-communicable diseases which are part of the risk factors associated with complications in the COVID-19 pandemic. It is also essential to consider enhancing funding in the field of substance abuse treatment and prevention. However, it has been noted that the social distancing measures [*macrocosms*] may increase substance abuse [*microcosms*] in many nations (Arora & Grey, 2020; Kopak & Van Brown, 2020; Vigo et al., 2020). Thus, rehabilitation systems have to be prepared for an upsurge in the burden of substance abuse and addictions during and after the pandemic. Social workers have to be geared for an increase in substance abuse-related caseloads especially during and after the pandemic.

Aging

Geriatricians and the adjoining scientific community are actively discussing the philosophical, deontological, nosological, pathophysiological, clinical, and biological aspects of aging as disease but it is impossible to equate the concept of aging with the concept of disease (Novoselov, 2018). Since the beginning of recorded history young people have outnumbered their elders. Aging has generally been implicated in several diseases such as cancer, diabetes, dementia, and other health conditions (Gavrilov & Gavrilova, 2018). The potential socio-economic costs of non-communicable diseases of this type rise sharply with age and have the ability to affect economic growth [*macrocosms*] (National Institutes of Health., & World Health Organization, 2011). Persons older than 60 years old with chronic diseases [*microcosms*] are greatly susceptible to infection by coronavirus and experience higher mortality rates [*macrocosms*] when they are infected (Zhou et al., 2020).

Aging can be associated with a loss of immune competence, a process referred to as immunosenescence (Agarwal & Buse, 2010; Pera et al., 2015; Pawlec et al., 2010 cited in Calder, 2020). The highest rate of COVID-19 infection has been noticed in adults and aging individuals (Wu & McGoogan, 2020). The period of onset of COVID-19 symptoms to death is shorter among patients above 70 years than those below the age of 70 (Wang et al., 2020 cited in Rothan & Byrareddy, 2020). In most groups of hospitalized patients with confirmed COVID-19, the median age ranged from 49 to 56 years (Chen et al., 2020). There are estimates that susceptibility to infection in individuals under 20 years of age is approximately half that of adults aged over 20 years, and that clinical symptoms manifest in 21% (95%

credible interval: 12–31%) of infections in 10–19- year-olds, rising to 69% (57–82%) of infections in people aged over 70 years (Davies et al., 2020).

In general, the risk of getting severely ill from COVID-19 increases with age. In fact, 8 out of 10 COVID-19-related deaths reported in the United States have been among adults aged 65 years and above (CDC, 2020). In an initial phase of the COVID-19, death rates were 11.4 times higher among those 80+ than they were for people aged between 50 and 59 (Dowd et al., 2020 cited in Reher et al., 2020, p. 2). Additionally, the elderly in long-term care (LTC) and their caregiving staff are at elevated risk from COVID-19. Policies should also be developed [*macrocosms*] to ensure that LTC facilities remain adequately staffed and infection control protocols are closely followed [*mesocosms*] (Gardner, States, & Bagley, 2020).

COVID-19 exhibits a clear characteristic of an age-related disease, and that age and age-related diseases are its major risk factors. Research suggests targeting the aging process itself can be a viable orthogonal strategy against COVID-19 and other deadly respiratory diseases (Santesmasses et al., 2020). If biogerontologists' endeavors to control the process of human aging are successful, this trajectory has profound implications for how we conceive of aging, and for the future of many social institutions (Fishman, Binstock, & Lambrix, 2008). There has been speculation that the fight against COVID-19 disease involves testing the hypothesis that anti-aging drugs like senolytics may have prominent role in preventing the transmission of the virus and in aiding its treatment (Sargiacomo, Sotgia, & Lisanti, 2020). The anti-aging gene Sirtuin 1 (Sirt1) is vital in maintaining the immune system (Martins, 2018).

However, the anti-aging therapies have been criticized in so many ways but this article reflects:

There has been a long-standing critical position in medical, scientific, literary and philosophical discourses that the very goal-setting of “antiaging” (i.e. medical intervention into aging) is somewhat ethically questionable. There has been a strong tendency among well-established physicians and scholars to consider aging as universal, inexorable and therefore “normal” and accordingly, any attempts to “meddle” with it, would be foolish, futile and even unethical. The very attempt to intervene into or oppose a phenomenon that is considered “normal”, “natural” or a “universal human condition” would be in this view, be deemed ethically reprehensible, as it would imply attempting to oppose the very “nature” or “humanity”(Stambler, 2018, p. 1).

The above view reflects on the natural law humanism which gives emphasis to maintaining the course of nature as determined by the naturalist occurrences of events. It fosters on appreciating nature as it is and opposes reengineering of the course of nature. Natural law places moral value on the human nature as we know it (Post, 2004).

There are also those who have advocated for the anti-aging therapies. The posthumanist embrace decelerated and even arrested aging, but only as a small part of larger vision to re-engineer human nature, and thereby to create biologically and technically superior human beings (Hayles, 1999 cited in Post, 2004). Au fait with the need and promise of healthy human prolonged existence, it may be considered an ethical duty, especially for the professionals in biology, medicine, health care, economy, and policy to facilitate the research, development, and equitable application of optimum, safe, and humanely beneficent antiaging and lifespan-extending therapies (Stambler, 2018). There is need for more research in the cultural acceptability of such therapies in different areas. Essentially, research can also explore the Shona construct of using stones and charms to immortalize oneself known as “kuteya riva” in the face of antiaging therapies. How the anti-aging therapies infringe the client’s spiritual beliefs and religious practices is also an area to consider. Gerontological social work should further explore these issues in line with the biopsychosocial model and also the ecological systems thinking.

Physical exercises

Physical inactivity is the fourth on the list of the leading causes of death worldwide (Oloo et al., 2017). Physical exercises are considered as effective in the prevention and treatment of several diseases such as diabetes, heart diseases, cancer, hypertension, and obesity (Pederson & Saltin, 2015; Herdy et al., 2014; McKenzie, 2012;). These chronic diseases have been implicated before in this article as

contributing to the increase of mortality rate in the COVID-19 pandemic. Exercising prevents a sedentary lifestyle. Sedentarism increases risks of major non-communicable diseases like obesity. Again, obesity is associated with a loss of immune competence (Calder, 2020). Physical activity is vital for maintaining proper health and physical function even during the pandemic.

Retaining optimum physical conditioning can improve immune function and potentially protect a person from serious complications related to respiratory infections (De Castro, Neto, & de Castro, 2020; Fletcher et al., 2013; Pinto, Dunstan, Owen, Bonfá, & Gualano, 2020). During periods of lockdown, it is recommended that exercise should be adequately promoted as social distancing itself (Matias, Dominski, & Marks, 2020). Exercises [*microcosms*] should be considered within the scope of the severity of disease, lock down parameters, and social distancing policies [*macrocosms*]. Social workers together with other health professionals such as occupational therapists and rehabilitation technicians need to encourage physical exercises in the rehabilitation of clients (Williams & Streat, 2004). It is important to note that physical exercises are feasible if one has access to food and also more useful if one is taking adequate nutritious meals. Thus, social protection programming, food security, and pricing of food items to ensure affordability and availability [*macrocosms*] are also important factors to consider when exploring the concept of physical exercises [*microcosms*] in the domain of the morbus. The next section explores the role of nutrition and food security in the fight against the COVID-19 pandemic.

Nutrition

Under-nutrition remains a problem for viral pandemics of the twenty-first century and beyond (Omar, Elfagi, & Nouh, 2020). Relevant dietary intake may be vital to protect against an excessive inflammatory response to SARS-Cov-2 infection, preventing the evolution of the infection to severe disease or even during COVID-19, improving its outcome (Messina et al., 2020 cited in Ribeiro, Garcia, Dametto, Assuncao, & Maciel, 2020). The immune system is always active, performing surveillance tasks, but its activity is enhanced if one becomes infected. There is need for an adequate supply of a wide range of nutrition to support the immune system to function optimally (Calder, 2020). The nutritional status of individuals has long been considered as an indicator of resilience against destabilization (Harrison & Taren, 2018; Naja & Hamadeh, 2020). Deprivations in water and nutrition predict a high risk from COVID-19 in terms of hygiene, weakened immune systems, and respiratory conditions (Alkire, Dirksen, Nogales, & Oldiges, 2020).

The outbreak of COVID-19 pandemic [*macrocosms*] has predisposed most families to excessive food shortages [*microcosms*]. About 369.5 million children who normally rely on school meals for reliable day nutrition must now look at other sources (United Nations, 2020). Low-income families cannot afford to stock food that can sustain them for a long time so they require frequent trips to grocery stores thereby increasing their exposure to the virus (Reeves & Rothwell, 2020). In addition, their susceptibility to infection is heightened by poor nutrition (Van Barneveld et al., 2020). The crisis has rendered many people jobless and increased poverty such that food security is likely to become a major issue (Matias et al., 2020). The vicissitudes of the poor are exacerbated by some business people taking advantage of the crisis to hike prices of food items. Panic buying results in food shortages and an increase in prices of food staffs during the pandemic (Chen, 2020). High food prices tend to worsen poverty, food insecurity, and malnutrition (Food and Agriculture Organization, International Fund for Agricultural Development., & World Food Programme, 2011).

Food access is greatly influenced by people's capabilities [*microcosms and mesocosms*] and no matter how good the food and nutrition policy is, political will [*macrocosms*] is a vital determinant of whether or not implementation will be adequate (Chemutai, 2016; Pelletier, 2002). There is need for governments, international organizations, local authorities, and the business community to collaborate in the fight against food insecurity as it makes people susceptible to infection and other health problems. There is also great need for interventions to prioritize geographical areas that are severely affected by natural disasters such as floods and droughts, and now the COVID-19 outbreak. It is

essential to note that the COVID-19 can also have effects on the digestive system as it has been associated with the gastrointestinal tract presenting with anorexia, nausea, vomiting, diarrhea, and abdominal pain (Aguila et al., 2020; Gu et al., 2020). These symptoms also contribute to malnutrition showing reciprocity in the factors associated with the COVID-19 pandemic.

The outbreak will expose so many families to extreme levels of poverty and malnutrition. There is need to learn from this pandemic and strengthen food security programmes in communities and nations. Further exploring on the reciprocity and vicissitudes of the spectrum of the morbus, I acknowledge the estimates from the International Food Policy Research Institute put forward that an additional 140 million people will be thrown into living in extreme poverty on less than US \$1.90 per day in 2020 because of the pandemic (Laborde et al., 2020 cited in Headey et al., 2020). The United Nations Food Programme has warned that an estimated 265 million people could face acute food insecurity by end of 2020, up from 135 million people before the crisis mainly because of income and remittance losses (World Food Programme, 2020).

Interventions should also consider people with disabilities, the unemployed, displaced persons, refugees, orphans, and other vulnerable groups in the society. The philosophy of social work profession involves the alleviation of people's suffering, working with marginalized communities, and also ensuring that the inherent dignity of human beings is met through the provision of basic human needs such as food. Social protection programs should be considered to enhance the resilience of communities particularly in issues to do with food security. There is also need to establish nutrition emergence responses such as the malnutrition treatment programmes so as to strengthen surveillance and the treatment of pellagra cases (UNICEF Zimbabwe, 2020). Nutritional management is also dependent on the severity of the illness (Omar et al., 2020). Nations should consider formulating nutritional guidelines in line with COVID-19. Utilizing the anti-oppressive practice framework and the critical theory, social workers should work toward the attainment of adequate food for all through advocacy movements that are against politicizing food programmes and social protection interventions. Social workers are also essential in agro-based interventions as they are key players in community work, resource mobilization, research, and also monitoring and evaluation of projects. Social work is intrinsically interested in the eradication of extreme poverty and all forms of social inequalities that deprive humanity of adequate food supply and nutrition. There is need for the integration of health promotion benefits of the agro-based programmes such as food and other livelihoods projects.

Sex

The increasing reports around men and COVID-19 have concentrated on the fact that their mortality rates are higher than women's (Gebhard, Regitz-Zagrosek, Neuhauser, & Klein, 2020). The explanations have been that men have higher rates of smoking, underlying conditions such as heart and respiratory diseases and the biological differences between sexes, such as hormones and women's stronger immune systems. In a recent study, scientists collected plasma samples of 331 patients who were Covid-19 positive. As an outcome of the study some interesting facts emerged highlighting that women contain more antibodies as compared to men which comparatively boost their immune system relative to men (Biswas, 2020). In a study in Italy, the excess in mortality of Covid-19 patients was higher among men than among women in cities in the north versus the central and south of Italy (men: +87% and +70%, and women +17% and +9%, respectively) (Micheolozzi et al., 2020, p. 2).

Research has shown physiological vulnerabilities of men as compared to women. As a corollary to this, there is need to enhance behavior change interventions that promote hygiene practices, reduce smoking, and encourage other health-seeking behaviors among men but not also marginalizing women. This paper without segregating the call of gender equality and equity notes that COVID-19 reminds social workers that men need not to be forgotten in health interventions. Social work is a social justice profession which aims at achieving social equalities and health interventions for all. However, most interventions in the health systems especially in developing nations seem to be overemphasizing on women and children whilst forgetting men. Social workers should try to enhance

behavior change programmes that are also targeting men so as to limit the severity of the disease burden in men in outbreaks such as COVID-19 pandemic.

Psychological factors

This section considers the emotional, behavioral, and psychological factors that influence the burden of COVID-19. It will explore on anxiety, suicidal ideation, and suicides related to COVID-19, and hygiene compliance as well as behavior change.

Anxiety

The spread of coronavirus in many parts of the world [*macrocosms*] has led to increased levels of anxiety [*microcosms*] as people become highly concerned about their lives and livelihoods (Roy et al., 2020; Shah, Chaudhari, Kamrai, Lail, & Patel, 2020; Torales, O'Higgins, Casaldelli-Maia, & Ventriglio, 2020). Social isolation protocols [*macrocosms*] induce anxiety [*microcosms*] in many citizens during the pandemic (Brooks et al., 2020; Mukhtar, 2020; Sakib et al., 2020; Thakur & Jain, 2020). Anxiety is a kind of physiological stress that presents with a series of physiological events and it can cause a decline in immunity (Liu et al., 2020). Put simply, anxiety impacts the resilience of the body against infection such as coronavirus. Health anxiety is also an important factor in determining the success or failure of interventions in COVID-19 as it affects rational decision making amongst individuals (Erkasap et al., 2020).

The increase of COVID-19 cases, low levels of preparedness and inability to contain the spread cause fear and anxiety among health workers (Shah et al., 2020). Anxiety in health-care workers during the pandemic emanates from mainly eight sources:

- Access to appropriate personal protective equipment.
- Being exposed to COVID-19 at work and taking the infection home to the family.[*exocosms* for family members of the health-care workers]
- Not having rapid access to testing if they develop COVID-19 symptoms and fear of transmitting infection at work.
- Uncertainty that their organization will take care of their personal and family needs if they develop infection.
- Access to child-care during increased work hours and school closures.
- Support for other personal and family needs as work hours and demands increase (food, hydration, lodging, transportation).
- Being able to provide competent medical care if deployed to a new area (e.g. non-Intensive Care Unit (ICU) nurse having to function as ICU nurses).
- Lack of access to up-to-date information and communication. (Adapted in Shanafelt et al., 2020)

Thus, managers and clinical administrators have to address these issues so as to reduce anxiety of health-care providers during the pandemic. Some of these issues will be discussed in detail in the section for ergonomics and occupational health which follows below social factors.

Emotional distress people including those with high levels of anxiety need to first set the limit of COVID-19 related news consumption from local, national, international, social and digital platforms and the sources must be authentic like World Health Organization (Thakur & Jain, 2020). Training community volunteers [*mesocosms*] in psychological first aid in the future may be an effective and sustainable way to alleviate mental stress of the general public during times of crisis (Huang & Zhao, 2020). Ensuring the sustainable provision of Protective Personal Equipment (PPE) to health-care workers is essential to reduce levels of anxiety and also the rate of transmission. Literature has it that prayer helps in reducing anxiety especially to the clients in distress (Bade & Cook, 2008; Cha & Wirth,

2001). Most debates in the existential social work practice have focused on exploring if social workers can actually pray together with their clients when the client proposes to do so (Nilsson, 2018). Besides issues of addressing anxiety through spirituality, social workers offer psychosocial therapies during emergencies such as the COVID-19 pandemic so as to reduce anxieties and distress (O'Leary & Tsui, 2020).

Suicidal ideation and suicides related to COVID-19 pandemic

The increment of suicide rate during and after a pandemic is not highly unexpected, but more common (Mamun & Ullah, 2020). COVID-19 is associated with suicidal behavior (Gonzalez-Diaz, Cano, & Sanchez, 2020; Goyal, Chauhan, Chhikara, Gupta, & Singh, 2020; Hossain et al., 2020; Jani, 2020). Like preceding health outbreaks such as the 2002 severe acute respiratory syndrome, the present COVID-19 appears to be leading to higher suicidality (Griffith & Mamun, 2020). Aside of COVID-19, approximately 75% of suicides occur in low and middle-income countries (LMICs) where rates of poverty are high [*macrocosms*], and evidence proposes a relationship between economic variables and suicidal behavior [*microcosms*] (Bantjes et al., 2016:1; Choi, Kim, Shin, & Han, 2019). In this COVID-19 pandemic, most of the suicides occur due to lockdown-related economic recession (Bhuiyan, Sakib, Pakpour, Griffiths, & Mamun, 2020; Mamun & Ullah, 2020). There are also other factors explaining the increase of suicide cases during the COVID-19 pandemic and these include: social distancing, anxiety, and pressure in medical health-care professionals, social boycott, and discrimination among other reasons (Thakur & Jain, 2020).

Examples of COVID-19-related suicides include a case of a 66-year-old male who had throat cancer and committed suicide after testing positive for COVID-19 in New York City (Moore & Bensimon, 2020). This case demonstrates the biopsychosocial approach to suicide risk assessments especially the SADPERSONS assessments in that it integrates clinical features of age, sex, and the existence of chronic illness which are all risk factors of suicidal behavior. In addition, an American couple from Lockport, Illinois was involved in a COVID-19-related – murder-suicide by gunshot (Griffith & Mamun, 2020). The biopsychosocial approach in suicidal behavior related to the COVID-19 pandemic is also evident in an Indian case of an academically gifted 15-year-old award winner whose father had lost income during the lockdown. The teenager committed suicide because she could not access online education and thought her academic grades would drop (Lathabhavan & Griffiths, 2020).

Psychological first aid and the implementation of psychosocial support systems are vital to link the collaborative services and coping information among disaster affected individuals (Wang et al., 2020; Birkhead & Vermeulen, 2018). Socio-psychology needs and interventions for mental rehabilitation should be designed. Tele-counseling along with 24-h crisis response services for emotional and behavioral support need to be implemented (Thakur & Jain, 2020). There is also need for peer support and debriefing programs among health-care workers to deal with burnout, moral injury and also suicidal tendencies related to enormous stress associated to the pandemic. There is need to enhance cushioning programmes that enhance that support the most vulnerable groups of society so as to promote their psychosocial and physical well-being through social protection interventions that help to flatten the curve of poverty-related suicides in the pandemic.

Hygiene compliance and behavior change

Psychological factors include behavioral compliance to the rules and regulations of social distancing, hygiene, and also wearing of masks. Health behaviors such as hand-washing and wearing masks have proven to reduce transmission of viral infections (Assab & Temime, 2016; Pittet, 2001). Hand washing [*microcosms*] with soap and also using alcohol-based hand rub is being widely used as one of the cheap and primary methods against the spread of COVID-19 (Gammon & Hunt, 2019; Lotfinejad, Peters, & Pittet, 2020). The World Health Organization (WHO) has developed guidelines [*macrocosms*] for

hand washing in health care and these are usually put near hand basins in clean utilities in the hospitals (WHO, 2009).

The CDC explores hand hygiene as frequent hand washing with soap and warm or cool water for 20 seconds or use alcohol-based hand sanitizers with at least 60% alcohol (Centers for Disease Control & Prevention, 2020 cited in MacGibeny & Wassef, 2020). Poor hand hygiene practice by health-care professionals is well established as an important factor of cross-transmission of health-care-associated infections (Powell-Jackson et al., 2020; Sohrabi et al., 2020). The issue of regular hand washing is not only meant for health-care professionals but for all citizens. However, for more than 2.2 billion people who are in the world, washing their hands regularly is not an option because they have inadequate access to water (United Nations, 2020). It is important to note that the basic handwashing access in Africa is limited [*macrocosms*], with 36% with no access to household hand-washing facilities and a further 30% with only limited access (United Nations Economic Commission for Africa, 2020, p. 2). This impedes on compliance in handwashing recommendations [*microcosms*]. Thus, there is need for the improvement of access of safe water and sanitation for the effective fight of communicable diseases (Manderson & Wahlberg, 2020).

Social distancing is a measure that has been put by authorities [*macrocosms*] to help minimize the proliferation of COVID-19 as it reduces physical contact between people [*microcosms and mesocosms*] (Wilder-Smith & Freedman, 2020). A study examining the statistical correlation of a Physical Distancing Readiness Index to the incidence rate and case fatality ratio of COVID-19 showed that poorer households are disproportionately endowed for observing physical distancing and optimum implementation of lockdown (Lingham & Sapkal, 2020). For residents of the urban slum [*mesocosms*], social distancing is impossible if such a protocol does not come with related social protection interventions [*macrocosms*] targeted to the most socially vulnerable in the society [*microcosms and mesocosms*] (Wasdani & Prasad, 2020). Other than social distancing, wearing of masks has been identified as one effective method of reducing the excessive proliferation of the virus. If the US had on 1 April 2020 universally mandated that employees of public-facing businesses use masks, there could have been nearly 40% fewer deaths by the start of June (Chernozhukov, Kasahara, & Schrimpf, 2020). It should be noted that the social distancing and masking policies [*macrocosms*] are only effective if there is behavioral compliance [*microcosms*] of the populace [*mesocosms and macrocosms*].

Social factors

There are several social factors that aggravate the proliferation of COVID-19. This article is only going to consider the following:

Stigma and discrimination

Stigma has been identified as a factor impeding health access in other outbreaks like SARS and Ebola virus disease (EVD) that have occurred before COVID-19 (Park, Lee, Park, & Choi, 2018; Person, Sy, Holton, Govert, & Liang, 2004). The experience of fear and threat has ramifications not only what people think about themselves [*microcosms*], but also how they feel about and react to others – in particular outgroups [*mesocosms*] (Van Bavel et al., 2020). The outbreak of COVID-19 has also been highly racialized and stigmatized around the global community mainly due to the origin of the virus and its rate of transmission (Haokip, 2020; Reny & Barreto, 2020). Stigmatization is a reality and can highly affect populations seeking and accessing care (Bruns et al., 2020). Social workers deal with minority groups, the disadvantaged and vulnerable members of the community who need emancipation and empowerment. Social workers working in hospitals have the responsibility to participate in policies that address access to health care and also fight stigmatization (Walter-McCabe, 2020). This paper calls for the developmental approach in clinical social work. It calls for social investments, equal access to health services and also a fight against inhuman practices that worsen health inequalities.

Migrants and refugees will be particularly vulnerable during the pandemic due to increased stigma, discrimination, and restrictions on their movements and rights (Sengupta & Jha, 2020; Vigo et al., 2020). Racial socio-economic injustice has also dismantled the community's resilience and capacity to fight natural and man-made disasters (Holifield, 2001; Logan, 2009 all cited in Kim & Bostwick, 2020). Underlying structural racism and socio-economic barriers will exacerbate difficulties in this public health emergency (Clark & Gruending, 2020; Walter-McCabe, 2020). Black US residents are often suspicious of the health system, with a legacy of abuses such as the 1932–72 syphilis study in which exclusively black participants were allowed to die untreated (Dyer, 2020). Stigma and discrimination has been implicated earlier on in this article in issues of COVID-19-related suicides. Calls for the introduction of strong anti-racism law which depends on the responsiveness of law enforcers and the effectiveness of the criminal justice systems have been made (Haokip, 2020). Social workers in both developmental and clinical practices should advocate against stigma and discrimination as it heavily impedes on access to health services and also fuel the spread of infectious diseases.

Ethnic minority groups are at greater risks of complications in COVID-19 infections because of comorbidities such as hypertension in Black populations and diabetes in South Asians (Mitja et al., 2020). Black and Asian populations have been hardly hit by the virus in the United States. In Chicago, where blacks are 30% of the population, they comprise 70% of those killed by COVID-19 and in the state of Louisiana, blacks are 32% of the population but 70% of those who succumbed to the disease (Wingfield, 2020). There is need for social workers to strengthen their work on anti-oppressive frameworks, human rights perspective, ubuntu philosophy, and also on critical social work practice which aims at emancipating clients from all forms of oppression and social injustices that are manifest even in the COVID-19 pandemic. The profession of social work advances the values of human dignity and individual uniqueness together with acceptance while condemning stigmatization and marginalization. Clinical social workers are advocates (McLaughlin, 2009) who can work toward better living conditions for migrants. However, it should be noted that political will is of essence in addressing some of the issues that migrants are facing. For there to be better health for all there has to be health policies in migration, housing, unemployment, and minority groups.

Homelessness and overcrowding

Poor housing quality is linked to several negative health outcomes including chronic diseases (Bonney, 2007; Krieger & Higgins, 2002). COVID-19 has emerged as a housing emergency (Joffé, 2020). The Coalition for the Homeless (2020, p. 5) emphasize, “As of June 1st, the overall New York City mortality rate due to COVID-19 was 200 deaths per 100,000 people. For sheltered homeless New Yorkers, it was 321 deaths per 100,000 people- or 61% higher than the New York City rate.” It is also vital to acknowledge:

Homeless individuals are more prone to many factors including malnutrition to perhaps lowered immunity to catch infectious agents including COVID-19 due to waste disposal, weather extremes, contamination, increased prevalence of infections, and substance abuse with overall poorer quality of physical and mental health (Banerjee & Bhattacharya, 2020, p. 2).

Thus, it is clear that the issues of housing are critical in the management of infectious diseases. Social policy formulators need to consider prioritizing optimum housing in building resilience of communities against infectious diseases.

Social distancing is particularly impossible in overcrowded urban and rural conditions in which vast of the people live in North America (Joffé, 2020). Displaced populations such as refugees are at a higher risk to infection given crowded living conditions (Sharma, Scott, Kelly, & VanRooyen, 2020). The population density in urban Indian slums is very high and if Covid-19 were to breakout in the slum, its sheer density alone will result in the mass and efficient proliferation of the virus (Wasdani & Prasad, 2020). Overcrowded populations are usually characterized by difficulties in accessing clean water and sanitation facilities which is a health hazard in this pandemic. It is also difficult to conduct

tracing measures and ensuring treatment of the infectious diseases in such areas. It is high time governments prioritize the welfare of people through the provision of optimum housing projects.

Racial socio-economic inequalities have also been implicated in the housing sector and help explain the prevalence of high disease burden amongst blacks in New York. Black and Hispanic/Latinx New Yorkers are disproportionately affected by homelessness and these communities are also disproportionately affected by COVID-19 (Coalition for the Homeless, 2020). Social workers are the professionals most engaged with families living in low-income and subsidized housing and most familiar with the problems associated with inadequate housing (McCarty, 2008). Social workers are at a better position to fight for better housing schemes and also to engage politicians, nongovernmental organizations and also business communities in the need for a better housing for all people. Social workers as advocates for social justice should influence social policy formulations inclined to housing to be accommodative and address racial socio-economic inequalities.

Occupational and ergonomic issues

Health-care professionals are often self-reliant and many do not ask for help. This attribute may disadvantage them in a time of burgeoning workload, redeployment outside of a clinician's area of clinical expertise, and combating a disease that they have not previously encountered (Shanafelt et al., 2020). Nevertheless, frontline health-care providers are at higher risk of contracting the disease as well as experiencing adverse psychosocial outcomes such as anxiety, post-traumatic stress disorder, and substance dependence (Dubey et al., 2020; Wang et al., 2020). Ergonomic issues and occupational stress including long working hours in a stressful environment predispose health-care workers to COVID-19 infection and its propagation (Heyman & Shindo, 2020). Clinical social workers have the mandate to advocate for clients and also their colleagues (McLaughlin, 2009). Social work as a profession is also essentially interested in addressing ergonomic issues because these contribute to clinical problems such as anxiety and substance abuse. There have been calls for social workers in the public health to provide professional care regimes and peer support services to frontline health workers through the use of technology (O'Leary & Tsui, 2020).

Earlier I have appreciated that lack of personal protective equipment predisposes health-care workers to anxiety during the COVID-19 pandemic. Emphasis is given in this adumbration to ensure that ergonomic and occupational issues of health-care workers are addressed in such a pandemic as this. Again, if these occupational issues are not adequately addressed they have indirect [*exocosms*] effect on the welfare of the workers' families and neighborhoods [*microcosms and mesocosms*] especially in spreading the virus. As social workers seek to understand the worker in the scope of his or her environment, the call of social justice which is one of the values of the profession calls for advocacy for the provision of personal protective equipment and other essentials. It calls for resource mobilization and facilitation of clinical services even to the family members of the frontline health workers so as to reduce anxiety. As mentioned earlier on that the other sources of anxiety affecting health-care workers includes the uncertainty if their family needs are being addressed whilst they are at work. Social work should address such a gap in the health-care systems.

Global social policy and universal health coverage

The pandemic is beyond the scope of national levels as it also involves efforts to curb the proliferation of the virus in the global community. This article acknowledges that COVID-19 has exposed the mutually dependent relationship between health security and universal health coverage (UHC), and how the prolonged underinvestment in both areas renders us all vulnerable (Clark & Gruending, 2020). There is need for funding ensuring the universal monitoring of the health systems in the globe. Policies should be put in place to ensure accountability, transparency, and also collaborations in research that promotes global health. Global social policy also involves the concepts of analyzing COVID-19 through the lenses of Sustainable Development Goals (SDGs) and the Paris Agreements

(United Nations, 2020). There is need for nations and regions to partner one another in the fight against the proliferation of COVID-19. The global communities should foster on enhancing the resilience of health systems in the face of health outbreaks.

Implications

COVID-19 as a pandemic is beyond the scope of the biomedical approach. It is a phenomenon that requires a biopsychosocial exploration as the factors influencing its proliferation and increased burden are multifaceted. Poverty has been a major factor implicated in poor nutrition, lack of exercise, existence of comorbidities, homelessness, and lack of access to water and sanitation facilities – all of which are essential in the fight against the COVID-19 pandemic. Nations, regional bodies, and international organizations have to collaborate in ensuring that the Sustainable Development Goal of eradicating extreme poverty is achieved as this will help enhance the population's resilience in the fight of a future health outbreak. COVID-19 provides a chance to address the imbalances and to build stronger and more resilient health systems and partnerships (Clark & Gruending, 2020). COVID-19 is a serious call for both developmental and clinical social workers to reflect on how their practice impact on the burden of diseases. It calls for us to reflect on how the developmental social work issues impact on the clinical issues and vice versa.

Disciplines in medicine, social sciences, health, urban and rural planning, social policy formulation and other areas need to adopt a developmental scope of appreciating a phenomenon in relation to the holistic nature of health and community resilience in the face of disaster. There is need to acknowledge that the response to disasters or pandemics starts way before the declaration of a pandemic by the World Health Organization. The fight against any future outbreak begins before it emerges. Building on community resilience, better livelihoods, and equality will go a long way in the fight against pandemics. The need to address issues of homelessness, overcrowding, lack of water and sanitation facilities, poor nutrition, comorbidities, and other poverty-related factors has been emphasized. Social case work has to assume a developmental stance in its scope and interventions (Van Breda, 2018). In the same vein, developmental social workers have to assume a clinical approach in emphasizing on the prevention of diseases through macro practices. If social work in the public health is to fully meet its mandate of addressing the social inequalities that are manifest in the COVID-19 pandemic it has to integrate a developmental approach in the clinical practice. Thus, this paper calls for an integration of a developmental approach to urban and rural planning, health and social investments, research, and also social policy formulation. It calls on the need to trace how global and national policies [*macrocosms*] affect the communities [*mesocosms*] and individuals [*microcosms*]. Put simply, it essentially calls for critical thinking that integrates the lenses of developmental approach and a clinical perspective to interventions for there to be a better future. Let us build cities for sustainable health and ensure resilient cities that are a therapeutic milieu for the optimum health of all.

Conclusion

Humans reside in an interconnected system which involves the biological domain, psychological field and also the social space which are all pivotal in ensuring the effective functioning of individuals, groups, and communities. Decisions made in the macrocosms and mesocosms [social domain] greatly affect the biological and psychological entities [*microcosms*]. What occurs in the biological and psychological domains [microcosms] can also impact that which exists in the social space [*mesocosms* and *macrocosms*]. The COVID-19 pandemic has shown the vicissitudes and reciprocities existent in the ecological systems and the biopsychosocial models in the face of adversity. It is only when communities, nations, and international organizations realize that pandemics are fought before they emerge that they will start to build a better therapeutic milieu for everyone so as to enhance the resilience of a whole people. One's own behavior can affect individuals, groups, communities, and ultimately the global community.

The fight against COVID-19 begins with you, it begins with me and it begins with all of us. Let us love one another as we love ourselves, ensuring that we commune well with nature and nurture while we are socially contracted to enhancing the safety and health of our cities. Let us be mindful of the vulnerabilities that weaken resilience in the face of a pandemic – and these we should urgently address for a better future. Importantly, let us leave a legacy of hope, unity, and humaneness (ubuntu) to the generations coming after us. Social work should adopt the scope of developmental-clinical social work (integrating the remedial and developmental perspectives in practice) to be able to fight future pandemics and also help lessen the health disparities while utilizing a biopsychosocial model and an ecological systems thinking. In the same vein, developmental social work interventions should aim at preventing the occurrence and proliferation of diseases through ensuring better housing, optimum food security, and other vital provisions that promote good health. Surely, pandemics are fought before they emerge. Resilience is built on addressing the socioeconomic inequalities that are manifest in the spectrum of “microcosms-macrocosms of the morbus.”

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