ISSN 2063-5346

IMPACT OF COVID-19 PANDEMIC ON VULNERABLE POPULATION: A THEORETICAL EXAMINATION

Neetu Kachhwaha[1], Geeta Meena[2], Girdhari Lal Meena[3], Vareesh Baghela[4], Pritika Jangir[5], Kiran Meena[6], Samiksha Sangwan[7], Keerti Bairwa[8]

Article History: Received: 10.05.2023 Revised: 29.05.2023 Accepted: 09.06.2023

Abstract

Coronavirus disease has proved much more than a health crisis. It has severely affected social behaviour, disturbances in psychology, undue fear, loss of concentration and economic crisis. It has affected every aspect of human life around the globe. Apart from playing with the health of people, this invisible enemy has also posed the danger of an unprecedented loss to human health, societal interaction, and harmony. Its most adverse impact has been on the vulnerable population worldwide, which comprises of immigrants, pregnant women, new-born babies, homeless people, refugees, and people below the poverty line. The hollow healthcare system in the rural areas became a major issue, particularly in countries with high population density. Densely populated countries with major proportion of vulnerable communities got adversely affected by the restrictions on the mobility, social distancing, self-isolation, lockdown of all public and private institutions, shortage of care takers and unavailability of social workers. The whole global supply chain was disrupted due to which the vulnerable population in both developed and developing countries being adversely affected. The present study aims at having a theoretical examination of the ways through which this global disease affected the vulnerable population across the world.

Keywords: refugees, pregnant ladies, immigrants, homeless people, poverty.

[1,2,4,5,6,7,8]Department of Zoology, University of Rajasthan, JLN Marg, Jaipur (Rajasthan)-302004, India

[3] Department of Economics, University of Rajasthan, JLN Marg, Jaipur (Rajasthan)-302004, India

Corresponding author[1]: ORCID- https://orcid.org/0000-0002-8614-2637

Email: drneetu2011@gmail.com

DOI:10.48047/ecb/2023.12.9.49

INTRODUCTION

The world had a tough fight with the invisible enemy to which it was introduced in December, 2019. This intangible foe, dubbed "Coronavirus" by the WHO, posed grave threats to humanity. The first case of this contagious disease caused by a virus belonging to the Severe Acute Respiratory Syndrome Coronavirus family (SARS-CoV-2) was reported from Wuhan, China in December 2019 (Shorabi *et al*., 2020). Since then, millions of people have died due to this deadly and contagious virus. Due to its severity and the rapid spread of the disease, WHO soon declared it a pandemic. The transmission of coronavirus begins with the breathing of the contaminated droplets or contaminated airborne particles that make up the viral load. It generally causes coughing, anosmia, ageusia, and fever. But the condition worsens when the virus continues to multiply in the body, which causes pneumonia, respiratory failure, septic shock, and multiorgan dysfunctions leading to the end of life. In severe cases, multiple organ systems like the respiratory tract, nervous system, gastrointestinal tract, and cardiovascular system were severely affected (Ravens-Sieber *et al*., 2022).

The COVID-19 pandemic has impacted the majority of nations and badly hit medical systems worldwide, but some demographic groups may be at more risk than others for the negative effects of the pandemic on psychological health (Uphoff *et al*., 2021). To stop the spread of COVID-19, an incredibly communicable disease, 50 percent of the world's population is now subject to some sort of regulatory limitation (Mottaleb *et al*., 2020). COVID-19 revealed vulnerabilities in healthcare systems in most countries responses to ongoing public health crises (Shokoohi *et al*., 2020).

The disease outbreak adversely affected the daily routine of millions of citizens, with major and most severe effects on their mental well-being. The limitations put in place by governments across the globe to slow down the transmission of the virus, concern about getting the disease, economic uncertainty, loss of employment, and feelings of loneliness are some of the factors identified as major factors that contributed to mental anguish (Uphoff *et al*., 2021). The global epidemic may make some associations more susceptible to mental illnesses than others. This includes demographic groups who are typically regarded as being more vulnerable because of their increased exposure to unfavourable conditions and surroundings (Banerjee *et al*., 2020).

The term vulnerable population is described by the European Centre of Disease Control (ECDC, an agency of the European Union) as the people who are living in a medically or socio-economic challenging conditions. This population includes the persons with medical complications (like patients who are psychologically unstable, physically challenged, suffering from dementia or immunocompromised *etc.)*, the elderly, minority people, the homeless, immigrants, refugees, *etc*. According to some studies, poor citizens in any developed or developing country have difficulty accessing the health-care system. The researchers also found that people belonging to the minority group were more hospitalised and died as compared to the general population. Homeless people were found to be asymptomatic but with higher rate of positivity due to the infection of SARS-CoV-2. This group is important as they amplify and worsen the incidence rate of COVID-19. Immigrants and refugees that share common overcrowded dormitories and sanitary facilities faced more challenges during the COVID-19 quarantine period. A sudden rise in the number of patients in the psychiatric wards and online consultation after a post-COVID situation was very common (Lauvrak and Juvet, 2020). All the mentioned subjects belonging to the vulnerable communities emerges due to the factors like poverty,

regulatory laws, health issues, age, population and overcrowding.

Poverty is defined as having inadequate access to clean water, meals, apparel, and housing, which serves as a reference point for a community in terms of opportunities for education, job opportunities, standard of living, and socio-cultural appreciation. Among the variables that impact the economic and social progress situation of an economic system include the growth rate, educational status, child mortality, life span, population wellness, low income, unemployment, discrimination, and lower participation rate. According to the World Bank, the COVID-19 global epidemic caused 40 to 60 million people to live in severe poverty. The confirmed corona cases and deaths were found to be high in the poor countries in comparison to the less poor countries. Hence, it was concluded that there a correlation between the poverty index and corona incidence rate by Finch and Finch (2020). The coronavirus outbreak has immediately caused a global decline in social and economic activity that has resulted in unemployment and falling incomes.

It is widely acknowledged that the limitations and transmitting regulatory laws forced by governmental bodies, along with the possible future higher risk of infection, could significantly worsen the difficulties already experienced by people living in socially and economically vulnerable circumstances. Medical professionals like doctors, nurses, and workers were more in contact with the COVID-19 patients. Due to a protocol designed by the government, rules and regulations applied, a shortage of sufficient protective gear, a heavy work load, marginalisation and discrimination of these front-line workers or direct care respondents correlated with psychological complaints like feelings of guilt, stereotyping, anxiety, and poor sleep (Banerjee *et al*., 2020; Uphoff *et al*.,2021).

Vulnerable and marginalised classes like captives and the homeless, as well as refugees and asylum seekers, may be less capable of protection against COVID-19 infection (Uphoff *et al*., 2021). Although the COVID-19 outbreak was contained by this lockdown, low-wage workers may still face serious dietary and nutritional insecurity if adequate assistance is not provided (Mottaleb *et al*., 2020). COVID-19 badly affected the mental conditions of pregnant women and caused multiple health issues due to compromised immunity and non-recommendation of many drugs during their first trimester in the pandemic. Children and teenagers who were subjected to quarantines of varying lengths and types due to disease outbreaks were more likely to exhibit adaptation disorder and clinical signs of sadness (Uphoff *et al*., 2021).

In elderly individuals, mental illnesses were more closely associated with concerns of exhaustion and distress, and they were negatively linked to online news, false information, and emotional instability. According to the World Health Organization (WHO), a person's mental health is critical in dealing with the negative effects of a pandemic. If a person is mentally ill, then it is very difficult to reduce the effects of an ongoing pandemic. The worldwide study showed that covid developed many psychiatric symptoms like dementia, anxiety, depression mood, and sleeplessness, which increased in number due to covid, especially in people above 60 years of age. Heart patients' numbers also increased due to the COVID outbreak. Many covid patients recovers from covid but due to heart attack, heart failure and cardiac arrest they lose their precious lives (Banerjee *et al*., 2020).

Kamis and their researchers (2021) concluded that overcrowding and poverty have a positive association with the rate of mortality during COVID-19. From a case study, the United Kingdom is a smaller country than Germany, but corona infection is spread much more rapidly in the United Kingdom than in Germany, and the death rate is also greater in the United Kingdom.

This shows that viruses are the same that infect people in different countries, but the immune system works differently from person to person for the same infection. Some of us are easily susceptible to disease and in some cases, our immune systems help fight against the virus (Wildman, 2021).

The governments of various countries' measures to prevent the spread of corona infection, such as lockdown, suspension of inter-country transportation, vaccination, quarantine, and so on, help greatly in controlling the spread of infection (Kamberi *et al.*, 2020).

Amongst regulatory measures, air traffic suspension is undoubtedly effective in reducing movement of goods and people in the near term. However, it also has a significant socio-economic impact in the long and short term. The immigration ban had a negative impact on most European air carriers and some nations more compared to others in the near term (Iacus *et al*., 2020). In contrast to the pre-Covid-situation, this COVID-19 had a negative effect on human life, the economy, surroundings, energy, and the transportation sectors due to the cumulative effects of additive waves (Nundy *et al*., 2021). The medical crisis draws immediate attention to the already challenging social and economic circumstances Italy was in, which then got worse and affected all areas of the country (Auriemma & Iannaccone, 2020). The phase-out of the European Commission's initiatives is intended to assist in developing a contingency plan for the shutdown brought on by COVID-19, which should ideally prioritise the most vulnerable individuals (Buheji *et al*., 2020).

However, this pandemic's positive side is that it increases community awareness of the need to assist one another, fostering social cohesion among the population (Supriatna, 2020). Economic repercussions from the coronavirus endanger global growth since China has the second-largest economy in the world and is a major trading company (Khan & Faisal, 2020). Additionally, in rare circumstances, the GDP decline might exceed 12%. The total financial cost of COVID-19 cannot be predicted with accuracy. Evidently, this is based on the situation's timeliness, the pandemic's intensity in the next few days or weeks and the political reactions of the various nations (Fernandes, 2020).

COVID-19 IMPACTS ON VULNERABLE POPULATION

The heaviest burdened group of the population is the vulnerable group, which was very crucial in managing due to the lack of information sharing, health literacy, carelessness, unhygienic, discrimination, and ignorance during the COVID pandemic. Those living below the poverty line, individuals living in refugee camps, immigrant citizens, and travellers' lives in the most compact, overcrowded areas, the chances of their susceptibility and sensitivity to infection and carrying a viral load were very high. This vulnerable population was ignored by every individual coming from a generally stable population. The impacts and implications for some vulnerable groups, such as homeless people, refugees, pregnant women, immigrants, people below the poverty line, are discussed as follows:

I. The effect of the pandemic on homeless people

1. ***Challenges of homelessness:*** People with no permanent accommodation, who live on the streets or in temporary shelters, are regarded as homeless people. Poverty, unemployment, and domestic violence are the main reasons behind homelessness. Homeless people live in unsanitary conditions with limited access to basic facilities like healthcare, hygienic food, and

water availability. This made them prone to malnutrition and various health ailments (Aldrige *et al*., 2018). To face a pandemic in such a condition is like a nightmare. Homeless people were one of the vulnerable groups that were adversely affected by COVID-19 (Leung *et al*., 2008; Madhav *et al*., 2017). The economic conditions of these homeless people deteriorated to a large extent during COVID-19. All the factories, hotels, and other organisations in which they were temporarily working closed suddenly due to lockdown. They did not have the proper documents to avail themselves of the government policies. This caused a sudden pause in their income and their access to food and medicine. Most of the homeless people suffered mental trauma during this pandemic. Even basic preventive guidelines, such as regular handwashing and avoiding social contact, become difficult to follow in such an unsanitary living environment (Mosites *et al*., 2020). Homeless people use public spaces, restrooms, streets, footpaths, gardens, and municipal bathrooms to survive in their daily lives. Due to the lockdown, access to these public facilities was also restricted, which created great trouble for those people (Bradbury and Isham, 2020). Furthermore, homeless shelters were also overburdened during the pandemic, which faced a lack of resources to help such a large number of people be accommodated (Wood *et al*., 2020). The transient nature of homeless people is a big challenge, as their tracing has become very difficult in that tenure. Proper communication of preventive guidelines to them was also a challenge. The majority of these people are illiterate and are unable to read the written guidelines. They do not adhere to the advice and guidelines of self-isolation and quarantine. Limited access to social and health services poses a great challenge (Tsai and Wilson, 2020).

2. ***Common Health Issues:*** The mental health conditions of homeless people have been greatly affected by COVID-19. These people already live in stressful conditions, which lead to anxiety issues, domestic violence, and various other anti-social activities. COVID-19 flared the situation for these people. Such conditions lead to increased alcohol consumption and drug use (Hayle, 2018). This has enhanced their involvement in criminal activities. Restrictions imposed during lockdown affected the homeless to a great extent. Cardiovascular and respiratory diseases prevail in this group in comparison to the non-homeless individuals as they consume alcohol, smoke cigarette, cocaine intake, chronic stress that confers cumulative effect on cardiovascular risk (Bagget *et al*., 2018). The review and meta-analysis research reported that the female homeless individuals, sex workers, imprisoner, experience high degree of health inequities and suffer greater health disorders as compared to male homeless

individuals (Aldridge *et al*., 2018).

3. ***Surveillance:*** Various steps, such as proper screening, risk stratification, making isolation centres, and sentinel surveillance, could help to deal with the deteriorating situation. Other measures include proper meal programmes, opening shelter places, and increasing spacing between beds might be helpful. The surveillance showed that the aging of the homeless population increases to two third in every year that results in the increase in chronic diseases every year (Hahn *et al*., 2006).

4. ***What can be done?*** Financial inclusion is important for homeless people, which might be ensured by governments to help these people. The pandemic strengthens the need for proper policies and programmes to be made and implemented for homeless people. It takes the collaboration of various social, health, and government agencies to develop programmes that ensure such people have access to basic services. Proper allocation of funds is necessary to provide healthcare assistance to the homeless. The development of a proper health infrastructure is another requirement for the testing and tracing of such people. Covid-19 has shown the importance of proper house development and shelters to strengthen the health structure for this oblivious group (Perri *et al*., 2020). Governments should make policies for curbing the problem of homelessness so that the fatalities caused by such pandemics can be alleviated in the future.

II. Corona Pandemic effects on pregnant ladies and new-born babies

1. ***Covid positive pregnant women*****:** During the recent COVID-19 pandemic, pregnant women and neonates were frequently identified as being at higher risk. Various research has shown that the COVID-19 disease symptoms in pregnant women and non-pregnant women are strikingly similar, especially in their first trimester. Despite the fact that the absolute risk is still very minimal as 75% of this group was asymptomatic, pregnant women with symptomatic COVID-19 who needed hospitalisation reported poorer maternal outcomes, such as fatal injury, pre-term birth, abnormal foetus, etc. Although untreatable, preterm birth was more common in women who tested positive for the COVID-19 test. The pregnant women showed higher thromboembolic complications, intravascular coagulopathy, myocardial infarction, and deep vein thrombosis (Elsaddig & Khalil, 2021).

2. ***Fears of a Pregnant Woman*****:** Immunosuppression occurs in nature during gestation in order to safeguard the developing embryo. Additionally, there are variations in the immune response over the course of the three trimesters of pregnancy. Early-pregnant women during this pandemic may experience different maternal and

prenatal outcomes from those who are closer to delivery. The safety precautions advised by various organisations during the current pandemic were the same for both pregnant and non-pregnant women. The pathogen has greatly increased people's fear and concern about the possibility of transmission, pregnancy succession, and effects on the new-born. The faith that if a mother has a disease, her child will likely catch it as well, and that it can spread from mother to child, is held more strongly by a very high percentage of women. Although there isn't sufficient proof to support this yet, it is still a significant source of stress for expectant mothers. The only option in the current situation that could lessen these pregnant women's nervousness and worries and enhance the result of their pregnancies is to provide them with adequate mentoring and assurance (Hossain *et al*., 2020).

3. ***Anxiety in Pregnant Women in East Java, Indonesia*:** In Madura, East Java, Indonesia, during the coronavirus pandemic, a study was done to determine the level of anxiety among expectant mothers. Anxiety has been linked to the 2019 coronavirus pandemic, particularly in pregnant women. One group of people who are at a significant risk of contracting the coronavirus is pregnant women, both for the unborn child and for themselves. Pregnant women must receive ongoing data in order to prevent nervousness, which can lead to complications for both mother and child, like low new-born weight and post-birth mental ailments. The result of this study indicated that almost 50% of the pregnant women suffer from severe and acute anxiety, while the remaining didn't develop anxiety. As a final result, the coronavirus pandemic does cause pregnant women to feel more anxious, which must be addressed to prevent harm to the mother and her developing foetus. Consultation is necessary to lower nervousness by advising the pregnant women to remain at home, wash their hands, wear masks, eat healthy foods, have their pregnancies checked, engage in at-home prenatal exercise, and call for help in an emergency (Zainiyah and Susanti, 2020).

4. ***Stress and Spiritual Health in Pregnant Women*:** Unfavourable pregnancy results in premature birth and a foetus that is lagging in its normal growth rate inside the womb. This can be brought on by pressure, which is one of the main contributors to these effects. The physical and mental health of pregnant women is thus a significant key issue during the COVID-19 pandemic. This study sought to assess the physical, mental, and moral well-being of expectant mothers during the COVID-19 pandemic. This research was done on almost 500 pregnant women who come to hospitals for their regular check-ups. The study showed that premature birth, infant mass, length, and head size, as well as children's respiratory tract, mental health, and stress levels during the corona, were significantly different in the present from a period of prior coronas. Premature birth and unhealthful birth may be more likely as a result of pregnant women experiencing increased stress and declining mental health during the COVID-19 pandemic (Nodoushan *et al*., 2020).

5. ***Caring for Women in Pregnancy, planning pregnancy or Postpartum:*** This study was done to

understand or to find out what effects were caused by COVID on pregnant women versus normal women. Women who are pregnant run the risk of developing a serious illness linked to other breathing problems. However, compared to the general population, pregnant women with COVID-19 do not appear to be at a higher risk for developing a serious illness at this time. A case study on almost 150 pregnant women reveals that only 10% of total pregnant women were affected by COVID, which is less than non-pregnant women (20% affected). Information from the United States also gave the same results, indicating that the chance of COVID infection is the same for pregnant and non-pregnant women. Transmission of SARS-CoV-2 from a mother to her child is possible at any stage of development. Symptomatic infants have IgG and IgM antibodies in their blood. IgG antibodies can be easily transferred from mother to foetus, and IgM antibodies are self-made by the foetus when the foetus comes into contact with viruses. Transmission of the SARS virus may occur by breast milk from a COVID-positive mother. The SARS-CoV-2.1 result comes out negative in the majority of new-borns tested after birth. But some new born babies have symptoms of COVID, where the transmission mode may be any of the above. The pregnant woman's immunity is lower than normal, so extra care and extra hygiene must be followed for her healthcare and assurance so that her chances of getting infection may be increased (Rasmussen & Jamieson, 2020).

6. ***Community Midwifery Model of Maternal and new-born care in Kenya*:** According to a case study in Kenya, the death of a child during labour or during the gestation period is more common in poor or middle-class developing countries, such as Kenya, due to a lack of resources. The COVID fear, lockdown protocols, lack of information and education all build up a fear in pregnant women, which effects their mental health. In this protracted medical emergency, pregnant women require a humane intervention that puts the mental and emotional well-being of the woman and the unborn child first. This study proposes the establishment of midwifery centres, the networking of informal community participation, and the regulation of the midwifery model, which offers a long-term plan to reduce the burden on hospitals and long-distance travel by pregnant women in times of emergency (Kimani *et al.,* 2020).

III. Pandemic effects on immigrants

1. ***Undocumented immigrants*:** Undocumented immigrants encounter significant challenges to getting telehealth treatments, including apprehension about using internet services and being dependent on social media for pandemic relief information and news bulletins, making them more vulnerable to online disinformation and disengaging them from public health communication. Despite the hazards of monitoring, surveillance, and targeting they encounter, immigrants show difficulties identifying risks to online privacy, and they experience differing technological consequences and handle such outcomes differently. Immigrants without legal status are a vulnerable

group that is purposefully difficult to reach. Information delivery from trustworthy sources via social media that meets the specific needs of undocumented immigrants must be simple, clear, concise, and accurate. It must be simple, concise, accurate, and delivered through social media from reputable sources to meet the specific needs of illegal immigrants. Immigrants from marginalised groups should get training on how to use technology with the utmost safety and health concern in their day-to-day lives, with a focus on how to manage their online presence and approach their vulnerabilities (Bastick and Mallet-Gracia, 2022).

2. ***Crisis of Immigrant Communities (U.S.)*:** Immigrant populations were among those most severely affected when the coronavirus pandemic took control of global issues of life and death. Latinx immigrants and other minorities have faced higher economic hardship and lower health outcomes in the United States (U.S.), leading to worrisome rates of COVID-19 mortality. Communities were affected differently by the economic and health effects of the coronavirus pandemic, making underprivileged groups more susceptible to infections. Many nations' preparations for pandemic preparedness ignore immigrant communities. Immigrant groups endured more economic harm, increased health risks, and worse health outcomes in the U.S. during the 2020 COVID-19 crisis, along with African, American, and other indigenous communities, who were frequently poor and had low socio-economic status. Additionally, even though they had been filing and paying their taxes with their Individual Tax Identification Number, illegal employees were not eligible for pandemic relief measures offered by the government, such as increased unemployment benefits and direct cash payments. When combined with travel restrictions that prevent immigrants from entering through the northern and southern borders and ongoing immigration raids, the exclusion of many immigrants from protective and supportive policies for workers during the pandemic demonstrates how their presence is not required or welcomed despite the fact that their labour is inexpensive. In particular, undocumented immigrants have several extra layers of disadvantage, making them more susceptible to the virus. These layers include extreme poverty, poorer educational attainment, language hurdles, lack of access to health care, and increased levels of stress connected to migration. Furthermore, even after the virus was found in the U.S. and travel limitations were put in place, Immigration and Customs Enforcement (ICE) kept detaining unauthorised people. Social work initiatives are essential to advocacy. For instance, in March 2020, social workers joined with the right organisations in arguing for the inclusion of immigrant families in legislation aimed at reducing the effects of the coronavirus. A

holistic, in-environment, intersectional perspective; moving beyond institution-based modalities and connecting to the community; bridging micro-macro disciplinary divides through advocacy and policy change; and attending to systemic issues are all introduced into social work practise with immigrants (Cross and Benson, 2021).

3. ***Covid-19 labours and immigrant employment*:** As the effects of the COVID-19 pandemic spread throughout the labour market, employment rates in the United States fell precipitously between February and April of 2020. In the past, male immigrants from native countries had a higher employment rate than male native countries. The labour market upheavals brought on by COVID-19 did away with the immigration advantage. Immigrant men's employment rates were lower than native men's by April 2020. The pandemic had a disproportionately negative impact on undocumented men, whose percentage of employment losses was far higher than that of legal immigrants. Quick effects on employment followed the economic shutdown. A level of unemployment not seen since the Great Depression the unemployment rate increased from a nearly record-low of 3.5 percent in February, 2020 to 14.7 percent by April, 2020. All males saw significant increases in their job loss rates during the pandemic, but undocumented men experienced increases that were more pronounced: 16.8% for natives, 23.5% for legal immigrants, and 31.9% for undocumented immigrants. According to the raw statistics, undocumented immigrant women were not particularly heavily struck by the epidemic. The percentages of native-born workers, authorised immigrants, and undocumented immigrants who lost their jobs during the pandemic were 22.4, 31.3, and 29.8 percent, respectively. During the recovery period from April to May 2020, the job finding rate for immigrant males remained lower than the rate for native men. Because the lockdown made it possible for more native workers to stay at home and continue working, immigrants were less likely to be hired in positions that could be carried out from a remote location and faced discriminatory employment repercussions (Borjas and Cassidy, 2020).
4. ***Cardiovascular health in immigrants (Europe):*** Many migrants travel to Europe, where they will constitute a growing proportion of the population in the coming decades. For Europe's public health, immigrants present both opportunities and difficulties. Although the pandemic poses a threat to the whole society, deliberate integration of immigrants into pre-existing healthcare systems may assist migrants in Europe to achieve better long-term health results. COVID-19 is probably going to have an impact on how immigrants are integrated into the public and health care systems in Europe. The integration of immigrants into

the public and healthcare sectors in Europe will undoubtedly be impacted by COVID-19. Urbanisation and environmental pollution are more prevalent in the host societies in Europe. The host communities also encourage refugees to adopt sedentary lifestyles and other behavioural changes, which alter the risk profile of migrants' cardiovascular diseases (CVD). Ischemic heart disease and stroke rates among migrants in Europe vary widely. CVD risk is influenced by interactions between the host nation and the country of origin as well as the rural *versus* urban environment. The result that immigrants had a greater frequency of hypertension has been supported by studies conducted throughout Europe. Additionally, compared to the host community, the condition was less well controlled in the migrant population, which may be a sign of both compliance issues and worse access to healthcare. Health among migrants is a multifaceted issue. The so-called "healthy migrant effect" is also supported by the data, which shows that immigrants had lower rates of CVD risk distribution and mortality than the host population. The foundation of health promotion is health literacy. There are few and poorly researched initiatives that specifically target migrant populations' health literacy, so there is probably a room for improvement. Lack of access to sufficient health care among migrants is likely to be caused in part by their language problems, disparate perceptions of risk factors, and ideas of health and disease. As the COVID-19 virus's epidemiology develops, people all around the world will be impacted by the ongoing problem. In migrants, a higher incidence of CVD, especially diabetes and hypertension, which have been associated with worse outcomes in COVID-19, was observed in migrants. It is crucial that these people are protected. Nevertheless, extending this protection depends on the information received by these patients about the new illness. The dangers of infection, how to reduce exposure, and who is at risk must be understood by the patients with clarity. The pandemic is a problem for the whole population, but the active participation of immigrants in the health care systems is still required and might aid in their long-term integration (Wernly *et al*., 2020).

5. ***Disgust Sensitivity and the Behavioural Immune System****:* Prior to a virus entering the body, the behavioural immune system (BIS) recognises it and steers clear of physical contact. According to the idea of the behavioural immune system, when there is a greater risk of a pandemic, people will become more hostile toward immigrants. Exposure to the COVID-19 pandemic danger in 105 parts of Europe is in fact linked to a worsening of views toward immigrants. From prehistoric times to today's communities, preventing the spread of infectious illnesses and dealing with their effects have been fundamental influences on human attitudes

and behaviour. This idea is supported by many studies that combine regional data of pandemic hazard in a multilevel design with original individual-level survey data of over 6,000 European respondents during the second Corona wave in winter 2020–2021. The possibility of a pandemic at the regional level—measured as the total number of COVID-19 cases or as the number of COVID-19-related fatalities per 100,000 people in 105 European regions—significantly raises anti-immigrant prejudice. While anger brought on by the COVID-19 pandemic does strengthen anti-immigrant sentiments, those who are afraid of the epidemic tend to have more welcoming attitudes toward immigrants. "Disgust sensitivity" is an individual variance in the propensity to experience disgust in reaction to prospective elicitors. It must be expected that the BIS's emotional processes have a detrimental effect on both the amount (regarding the avoidance emotions of dread and disgust) and the quality of interaction at times of serious pathogenic hazard (regarding the approach of emotion and anger). To avoid unexpected effects and backfiring, such as those that negatively affect social integration and cohesiveness, political communication and policy design should constantly take the emotions elicited among individuals into consideration (Freitag and Hofsetter, 2022).

6. ***Status of Internal Migrants (India)*:** Low-wage migrant labourers were compelled by India's coronavirus lockdown to leave the metropolis and return to their original home towns and villages. These migrant workers already had harsh and challenging living and working situations before the epidemic. Since the sources of revenue were cut off during the lockdown, it was difficult to know when or if one might start working and providing for one's family. The prevalence of financial problems was shown to be widespread, with mounting debt serving as a major source of stress and educational requirements acting as a barrier to employment. In their native towns and villages, migrant workers who were returning were ostracised because they were thought to have brought the virus from the city. The pandemic lockdown did, however, also reveal some surprising health benefits. In a document called "Psychosocial issues among migrants during COVID-19," the government of India's Ministry of Health and Family Welfare (2020b) listed the difficulties faced by workers in the pandemic. Others who owned bicycles began riding them, while those without access to or without the means to pay for transportation began strolling under the hot Indian summer heat. As lockdown limits were implemented throughout states, trains, buses, and employees travelling on foot with their families became trapped at or diverted from state boundaries. At least 200 migrants died in India's coronavirus reverse migration. It quickly turned into a "human tragedy" as food and water

became scarce while workers were on the move, and at least 200 more died. In his speech, which was broadcast live to millions of people, the Prime Minister addressed the nation, but he did not propose any specific actions to assist individuals who were in need during the pandemic lockdown. Instead, it outlined a future based on "Hindu economics," in which Indians would be more independent and in charge of their own fates. It is about 7.5 million migrant labourers who have returned to their hometowns and villages. Even while bigger entities like banks and possible facilitators like government loans remain unavailable to these excluded individuals, a culture of borrowing from known others is transformed into a relational obstacle. The neighbourhood moneylender bridges the gap between official institutions like banks and family and community lenders, who can be contacted. The migrant worker's actions to maintain his health, such as taking leisurely walks in the fresh air or eating meals with family members, as well as his expressed desire to remain at home until conditions in the city improve, are all agentic, albeit transient, and girded from all sides by structural contingencies and restrictions (Mookerjee *et al*., 2021).

7. ***Psychological status of Indian migrant workers in Saudi Arabia***: The current Coronavirus Disease 2019 (COVID-19) epidemic has affected billions of people worldwide, altering their working and living conditions. On 30 January 2020, the World Health Organisation's (WHO) director general first deemed the coronavirus outbreak a public health emergency of global significance. Later, on March 11, 2020, the WHO issued a pandemic declaration. On January 23, 2020, the Chinese government began enforcing restrictions; on 24 March 2020, India and 25 March 2020, Saudi Arabia went under lockdown. All foreign flights operated by the Saudi Arabian government were put on hold on 15 March 2020, and they resumed on 17 May 2021, that is, 14 months later. Flights to 13 countries, including India, would be grounded due to the coronavirus's second wave. The most recent report from the United Nations Department of Economic and Social Affairs (2019) states that India continues to have the largest number of its citizens living abroad (17.5 million) and is the top recipient of remittances. According to the Indian Census-2011, India had 45.6 crore migrant workers (38% of the population) (USD 78.6 billion). Due to the decline in commerce, the interruption of production, tourism (Hajj and Umrah), and hospitality, Saudi Arabia, an oil-rich nation with a thriving employment market, was severely impacted by the Corona virus. Global demand for oil is decreased by travel bans and lockdowns, and as a result, oil prices fell by 50% in March, 2020. In order to recover from the economic downturn, the Saudi government allowed private-sector enterprises to cut worker pay by up to 40% for six

months, after which the contract could be terminated. Due to the superior medical care and emergency services provided in Saudi Arabia compared to the poor medical care, high unemployment rate, and lower wages in their home countries, many migrants do not wish to return to their home nations. India is both the country with the most overseas migrants and the one that receives the most remittances worldwide. The movement of migrants is impeded by travel bans and lockdowns in Saudi Arabia and India. During the epidemic, 91.7% of migrants chose to remain in the destination country, while just 8.3% of migrants chose to return to India. The loss of jobs and wage reductions during the epidemic are the major factors driving people back to India. Compared to other migrants, immigrants with less education were more likely to experience anxiety, despair, and anxiety issues. Due to social duty and poor interpersonal skills, psychological issues are more severe in migrants over the age of 40 and those with a larger number of family members (Khan *et al*., 2021).

IV. Effect of COVID -19 on Refugees

1. Refugee food rationing in Rwanda (East Africa): The coronavirus disease (COVID - 19) has had a huge negative influence on the world economy, compelling the population to stay indoors and establishing a "new normal" of living. In the fight against the epidemic, Rwanda has made remarkable efforts. Although the COVID-19 outbreak has had various negative effects on the economies of every country, the refugees living in these repercussions do not spare Rwanda. In Rwanda, 164,000 people received refugee status as of December 2020, according to the UN High Commissioner for Refugees (UNHCR). The Democratic Republic of the Congo (DRC) and Burundi are among the majority's Great Lakes neighbours. The United Nations World Food Programme (WFP) has seen fewer donations as a result of the COVID-19 pandemic's effects on the world economy, which has severely decreased the food rations provided to refugees. The population of refugees and a number of camps, who are completely reliant on the government and humanity to survive with their meagre food requirements, will undoubtedly experience previously unheard-of consequences as a result of this scarcity. Due to forced returns, diseases, social disputes, and a consequent increase in sickness and mortality, this shortage of sufficient, cheap, and reasonable food would put refugees in danger of starving to death, endangering their lives. Additionally, since these populations already have fragile mental health, they would undoubtedly be at risk in such stressful situations. It is not unexpected that migrants have worse mental health than the general populace, including higher rates of anxiety disorders and depression, such as Post-

Traumatic Stress Disorder (PTSD). This is not a consideration of a bigger issue since there are very few comparable to the large proportion of the general population that get support. Rwandan refugees come under the UNHCR and WFP, who are in charge of making sure that refugees receive enough food assistance to protect these vulnerable communities and reduce health risks brought on by food shortages. (Manirambona *et al*., 2021).

2. Syrian Refugees in Kilis, Turkey: The goal of this study is to evaluate the COVID-19 epidemic impact on the Syrian refugees in the Kilis region of Turkey, who have varying life standards and social standing. It also aims to determine what options and attitudes they have for preventing and battling the pandemic. The study findings showed that the migrants are sensitive and have a low degree of insensitivity, and they are very concerned about COVID-19. There has been evidence that some people lack knowledge about the pandemic's seriousness, don't have access to personal protective equipment, and are unaware of its existence (such as masks and gloves). The degrees of compliance with regulations and satisfaction with the decisions made and actions performed by refugees in the battle against the pandemic may generally be described as close to each other and good (Budak and Bostan, 2020).

***3. Integration of women refugees into Turkish society*:** The study findings showed that the majority of women refugees experienced both good and bad aspects of integration in the areas of economics, education, and culture. The COVID-19 pandemic had a very negative impact on their integration, particularly in terms of daily living, employment, and access to healthcare. The integration process is complicated by the linguistic limitations that refugee women encounter, which pose serious difficulties and barriers. According to refugee women, COVID-19 had a significant effect on the integration's security component (Açikalin *et al*., 2021).

4. ***The psychological status of Syrian refugees in Turkey :*** Currently, the biggest global health burden is mental illness. People's mental health is being adversely impacted by the first wave of the COVID-19 pandemic, especially in vulnerable populations like refugees. Not only was a single aspect disturbed because of the COVID-19 pandemic, but it has manipulated every diversion of life, and these changes are reflected in the mental health of Syrian refugees in Istanbul. In order to lessen the potentially particularly crippling effects of COVID-19, it is crucial that they receive treatment. There was found to be a strong relationship between the COVID-19 factors and impacts on refugees' hope, stress level, and social interaction (Bernardi *et al*., 2021).

5. ***Refugees' implications in Canada:*** In order to frame the problem for subsequent research as the situation changes, this text aims to

contextualise the suffering of refugees in the first wave of the COVID-19 situation who were resettled in Canada. The inference of these researchers estimated the combined effects of actual problems occurring in this region, like healthcare facilities, economic support, lack of education and proper information, less social interaction, and issues while crossing the border by refugees into Canada. The basis of the outcome was the collection of experience received during the first wave of the epidemic. These findings supplemented the required data that can assist in the development of efficient policies and strategies to help refugees in Canada if their health is compromised or in case of any emergency (Edmonds and Flahault, 2021).

6. ***Refugee and asylum seeker health in Bologna, Italy:*** All of the study's key informants gave their consent to take part. Although a number of measures were put into place in the reception centres, such as mass quarantine, use of protective equipment, campaigning, and respective governance techniques, they always showed a partial stance toward immigrants and only took into account the biomedical aspects of COVID-19, ignoring its social root causes and ultimate effects. The most significant problems occurred with the administration's ability to manage the synergistic effect of the aggregation of diseases in reception facilities. They stemmed from this component and the absence of an efficient governance framework at both the local area level and national level, which had an impact on all the social determinants that determine refugee and asylum seeker health profiles (Da Mosto *et al*., 2021).

7. ***Rohingya Refugees in Bangladesh:*** The Rohingya people were violently persecuted by the Myanmar government, which led to a large-scale flow of refugees into Bangladesh in August 2017. Since then, the Rohingya refugees have been residing in the overcrowded, filthy camps in the Cox's Bazar district, numbering close to 900,000. It is particularly challenging to establish "social distance" because the refugees have been crammed into small camps. These camps are an excellent setting for the virus to spread quickly due to the overcrowding, lack of education, limitations of hygienic lavatories, lack of hand gloves, face masks, and hindered communication. Refugees are one group that is particularly susceptible to the consequences of the SARS-CoV-2 virus outbreak as countries seek to contain it. One group that is particularly at risk from this outbreak's effects is refugees. The consequences can be disastrous if problems are not given attention and resolved quickly (Barua and Karia, 2020).
8. ***Safety Protocol Adherence to Refugees:*** The Non-Government Organisations (NGOs) created and applied public health safety measures to decrease the risk of spreading coronavirus and to better serve the suffering refugees in the COVID-19 pandemic. Even under the best-case scenario, it can be challenging for people to follow protocols, and in nested crisis situations where one crisis triggers a string of related crises, adherence may even worsen. A major explosion in Beirut, Lebanon,

which resulted in thousands of injuries or fatalities and the destruction of crucial infrastructure, represented a situation of nested crises. Researchers conducted a cross-country comparison using information provided from Turkey, Jordan, and Lebanon in a study on safety protocols built during COVID-19 for the assistance of refugees to ascertain whether the nested crises in Beirut caused protocol adherence to be impaired (the "fragile rationalism" orientation) or whether adherence remained with evidencing strength (the "collective resilience" orientation). More facts about societal resilience were discovered, and we have applied this information to advocate public health measures for the delivery of services in disaster zones (Nawyn *et al*., 2022).

9. ***Working with Refugees in Sweden:*** The COVID-19 epidemic in Sweden, which is sometimes regarded as one of the most egalitarian nations, showed severe health disparities, which were especially harmful to those with refugee ancestry. Despite Sweden's reputation as a welcoming nation for refugees, this is also the case. The investigation revealed that although healthcare services have been available throughout the epidemic, additional security measures at receiving areas have had an impact on how refugees access healthcare. The transition to digital technologies, which was covered in this article, has had a specific negative impact on refugees, making it more difficult for people with refugee status to get healthcare services. The demands of refugees, whose living circumstances frequently prevented them from isolating themselves and withdrawing socially, were poorly considered while developing public health guidelines. Furthermore, in contrast to its European neighbours and the international media that refugees typically used, Sweden's health care workers and social workers primarily used non-compulsive aspects of the pandemic to encourage refugees to take fewer precautions such as self-isolation, schooling from home, and avoiding virus-infected zones than other countries. Health and social professionals had to update their advice in light of the updated precautionary recommendations as Sweden went toward a more restrictive approach (Mangrio *et al*., 2022).

10. ***COVID-19 spread control by modelling intervention:*** Non-pharmaceutical interference is the cornerstone of COVID-19 pandemic control because there are no effective therapies or vaccinations. People who are refugees live in unfavourable conditions that are prone to promoting the dispersal of disease in these camps. Very few COVID-19 cases have so far been reported in refugee camps, and it is still unknown whether practical non-pharmaceutical measures can stop the spread of the SARS-CoV-2 virus in these environments. It was possible to "flatten the curve" by spatially segmenting the camp (also known as "sectoring"), which resulted in peak infection being reduced by up to 70% and delayed by as much as several months. Infection rates were decreased overall and, in certain cases, epidemics were completely avoided because of the effective segregation of affected people and the usage of face masks. For maximum effectiveness, these measures must

be put into place rapidly. The dynamics of COVID-19 were barely impacted by lockdowns. The findings provide the camp management with a solid data base on which to base their intervention strategy planning and suggest that doable measures can contain the spread of COVID-19 in a refugee camp context. This model is adaptable to the needs of the study and its purpose (Gilman *et al*., 2020).

11. ***Migrants and asylum seekers in Mexico (U.S. border):*** The COVID-19 outbreak showed how the fear of politics may be used to destabilise the border between Mexico and the United States while also establishing states of exception. The Asylum Cooperative Agreements (ACA), Migrant Protection Protocols (MPP), Covid-19 CAPIO, Zero Tolerance Policy (ZTP), and Title 42, which were used under epidemic conditions under an obscure section of U.S. law to immediately eject asylum seekers and refugees, are highlighted for the development of a new exceptional work. Additionally, they showed how the fear of politics is employed in an effort to support nationalistic political objectives and hegemonic narratives that attack asylum seekers. This is done in the context of public health. These policies were created by the government of the United States under the supervision of President Trump and followed by the Biden administration, with a primary focus on asylum seekers and refugees located in the regions of Honduras, El Salvador, Mexico, and Guatemala, in violation of domestic law and obligations under international treaties (Garrett and Sementelli, 2022).
12. ***Refugee communities in San Diego, California*****:** Although the COVID-19 syndemic has affected individuals all around the world, refugee groups are particularly at risk from the pandemic's social, economic, and health effects. The research, carried out in a population of refugee camps in California, evaluated the variables linked to an increase in COVID-19 negative community consequences. During the COVID-19 epidemic, people in refugee camps have seen widespread loss of their jobs and deterioration of their mental well-being; these effects are greatest in respondents who have been in the US for six years or longer. In order to provide refugees who have been in the US for a longer period of time with the financial and social help they need to cope with the exceptional problems posed by the COVID-19 pandemic, more tailored assistance is required (McDouga *et al*., 2022).
13. ***Psychological distress of refugees in Europe: I***mmigrants and refugees, who frequently come into contact with the virus and have few protection options, have been particularly hard hit by the COVID-19 pandemic. Researchers investigated and claimed that during the COVID-19 epidemic, migrants and refugees would have experienced detrimental effects on their mental well-being and were unfairly singled out or discriminated against for spreading the illness in Europe. These harmful outcomes are shown to be more pronounced for people with more precarious housing and living conditions. The severe implications for mental well-being and infection rate develop the need for a proper housing facility as an alternative to manage both the mental distress

level and the spread of COVID-19 (Marchi *et al*., 2022).

V. Covid impacts on people lying Below poverty line

1. ***1. TB cases and mortality in India due to lockdown:*** According to the World Bank, India has the poorest people in the world. The Government of India (GoI) calculated that 22% of Indians lived below the poverty level in 2011-12. Many rural Indian states, such as Madhya Pradesh, Jharkhand, Odisha, Bihar, and Uttar Pradesh, have a greater prevalence of undernutrition. As per the International Labour Organisation (ILO), in India, about 90% of the labour and industrial workers in the informal sector were forced to fall below the poverty line due to the impact of the lockdown. In India, TB is closely linked to poverty, and this risk is mostly mediated by malnutrition. The lockdown during and after effects on the workers negatively influenced the tuberculosis incidence due to its effect on poorly available nutritive food and poverty. The nutritional state of the population is a powerful indicator of TB incidence, and malnutrition in adults accounts for 32-44% of the incidence of TB in India (Bhargava & Shewade, 2020).

2. ***Global poverty enhancement and socio-economic impact in the COVID season:*** The COVID-19 epidemic has caused many disadvantaged communities throughout the world to confront extremely difficult socio-economic, sustainability and livelihood implications (Wei and Zang 2021). As per the World Bank definition, poverty is "an inability to achieve a minimum standard of living" (2018). Today, more individuals all across the world are depleting many of the dimensions that are required for a basic level of life. The COVID-19 spread is just accelerating. COVID -19 had serious implications for three types of poverty: relative, absolute, and extreme. Relative poverty is the most affected type of poverty where average-earning people always feel a degradation in their living standards and suffer from overall insecurity and income disparity. The second form is absolute poverty, defined as lying below the line of poverty and having a high rate of unemployment. The least affected population under extreme poverty are the people already lacking clean water availability, vital food, a proper health care system, no permanent housing, uneducated, and information remaining more or less constant. COVID-19 is producing a 0.7% shift in global poverty rates in 2020. The slums are home to the bulk of Asia's (India's) impoverished households (Yadav and Iqbal, 2021). Migrant labourers from slums travel to cities for both short and long periods of time to seek greater earnings and job possibilities. The slum dwellers are the second most vulnerable group. Approximately 22% of the Indian population lives in urban slums, which are characterised by extreme poverty, overcrowding, bad living conditions, and a compromised urban public health establishment. Mumbai's Dharavi slums are one such example. Daily wage earners are the third group facing significant difficulties during the pandemic lockdown. This is the most severely impacted population as a result of the COVID-19

epidemic; owing to a loss of livelihood, they may run out of food. Domestic helpers are a fourth category that is common throughout Asia, particularly India. The majority of home employees have reached no agreement with their employers. Farmers are the last and most important group in this lockdown. Agriculture employs 75% of the Assamese population, making it the principal source of income for the state's citizens. Because of the lockout, farmers were forced to abandon their harvests (Buheji *et al*., 2020).

3. ***Castism and religion interaction with*** COVID ***-19*****:** The influence of COVID -19 on poverty graphs is enormous. Due to the COVID -19 issues, an extra 150–199 million people will become impoverished across India, while those who are currently poor will be driven further into poverty. Many states in India, like Uttar Pradesh, Odisha, Bihar, Chhattisgarh, Madhya Pradesh, *etc.*, are the most impacted by poverty, with rural poverty ranging from 50%-80% and urban poverty ranging from 40%-70%. The most affected categories are the Scheduled Caste, Scheduled Tribe, labour caste, and poorer self-employed people (Ram & Yadav 2021).

4. ***Economic influence on remittance-dependent regions*****:** A substantial proportion of households rely on migrant remittances to supplement their income. Households significantly cut meal amounts and consumed fewer food products in reaction to the enormous loss in incomes. Lower-income households lost a greater proportion of their income and expenditures, while government food assistance alleviated the negative effects significantly. Around 34% of families in India live below the INR 816 per person per month rural poverty level, leaving them more sensitive to economic shocks. Following the announcement of the lockout, families' capacity to acquire vital food and non-food goods to support their livelihoods has decreased significantly (Gupta *et al.,* 2021).

5. ***Small-scale fishers (SSF) in India*****:** Floodplain wetlands play a vital part in the socio-economic enhancement of stakeholders by providing employment and a source of income in the surveyed areas of Assam, Bihar, and West Bengal. It is estimated that about 55%, 70%, and 60% of floodplain wetlands fishers in the three states stated that the lockout caused them to lose many of their jobs. From March to May, fish harvests in Assam, Bihar, and West Bengal were 20%, 32%, and 44% lower, respectively, than in prior years. Due to COVID-19, 25% of anglers reported average to extreme psychological stress and anxiety disorders. Their livelihoods have been severely disrupted as a result of COVID-19, resulting in a rise in stress, worry, and financial uncertainty in their everyday lives (Das *et al*., 2022).

CONCLUSION

Covid disease has spread in almost all countries in the world, but the effect of the disease has been different in different countries. Because of the worldwide emergency caused by the coronavirus, many countries took stringent measures to control the pandemic and reduce the number of fatalities. The impact of COVID has not been uniform across the population

of a country. There are numerous difficulties and challenges confronting an already struggling group in the country, which includes pregnant women and their new-borns, immigrants, refugees, the poor, the elderly, and immunocompromised patients. These were the vulnerable people of society in terms of health, gender, age, region or standard of living. COVID -19 waves led those people towards a situation where they lost their identity due to their job losses and morality, mobility and stress. Although the government made many policies, strategies, laws, and quarantine rules to prevent the spread of viruses, many non-government bodies came forward to help the vulnerable population. However, COVID reminded us that constant attention is required to protect the well-being of the vulnerable population.

AKNOWLEDGMENT: The authors show a great sense of gratitude towards the reviewers who are reviewing this chapter. The authors acknowledge all the work and case studies done by the esteemed researchers and scientists that helped us to write this chapter efficiently.

CONFLICT OF INTEREST: The authors declare no conflict of interest in the processing of this chapter.

REFERENCES

1. Açıkalın, Ş. N., Eminoğlu, C., & Erçetin, Ş. Ş. (2021). Effects of COVID-19 on integration of women refugees into Turkish society. *International migration (Geneva, Switzerland)*, 10.1111/imig.12929, Advance online publication. https://doi.org/10.1111/imig.12929
2. Aldridge, R. W., Story, A., Hwang, S. W., Nordentoft, M., Luchenski, S. A., Hartwell, G., Tweed, E. J., Lewer, D., Vittal Katikireddi, S., & Hayward, A. C. (2018). Morbidity and mortality in homeless individuals, prisoners, sex workers, and individuals with substance use disorders in high-income countries: a systematic review and meta-analysis. *Lancet (London, England)*, *391*(10117), 241–250. https://doi.org/10.1016/S0140-6736(17)31869-X
3. Auriemma, V., & Iannaccone, C. (2020). COVID-19 Pandemic: Socio-Economic Consequences of Social Distancing Measures in Italy. *Frontiers in Sociology*, *5*, 575791. https://doi.org/10.3389/fsoc.2020.575791
4. Baggett, T. P., Liauw, S. S., & Hwang, S. W. (2018). Cardiovascular Disease and Homelessness. *Journal of the American College of Cardiology*, *71*(22), 2585–2597. https://doi.org/10.1016/j.jacc.2018.02.077
5. Banerjee, D., Vaishnav, M., Rao, T, S., Raju, MSVK., Dalal, P, K., Javed, A., Saha, G., Mishra, K, K., Kumar, V., & Jagiwala, M, P. (2020). Impact of the COVID-19 pandemic on psychosocial health and well-being in South-Asian (World Psychiatric Association zone 16) countries: A systematic and advocacy review from the Indian Psychiatric Society. *Indian Journal of Psychiatry*. *62*(3), S343-S353. doi: 10.4103/psychiatry.IndianJPsychiatry_1002_20
6. Barua, A., & Karia, R. H. (2020). Challenges Faced by Rohingya Refugees in the COVID-19 Pandemic. *Annals of Global Health*, *86*(1), 129. https://doi.org/10.5334/aogh.3052
7. Bastick, Z., & Mallet-Garcia, M. (2022). Double lockdown: The effects of digital exclusion on undocumented immigrants during the COVID-19 pandemic. *New*

Media & Society, *24*(2), 365–383. https://doi.org/10.1177/14614448211063185

8. Bernardi, L., Gotlib, I. H., & Zihnioğlu, Ö. (2021). Effects of COVID-19-related life changes on mental health in Syrian refugees in Turkey. *BJP Sych Open*, *7*(6), e182. https://doi.org/10.1192/bjo.2021.1009
9. Bhargava, A., & Shewade, A. (2020). The potential impact of the COVID-19 response related lockdown on TB incidence and mortality in India. *Indian Journal of Tuberculosis*, *67*(4S), 139-146. https://doi.org/10.1016/j.ijtb.2020.07.004
10. Borjas, G, J., & Cassidy, H. (2020). The Adverse Effect of the COVID-19 Labour Market Shock on Immigrant Employment. *National Bureau of Economic Research*, Working paper 27243, DOI 10.3386/w27243
11. Bradbury-Jones, C., & Isham, L. (2020). The pandemic paradox: The consequences of COVID-19 on domestic violence. *Journal of Clinical Nursing*, *29*(13-14), 2047–2049. https://doi.org/10.1111/jocn.15296
12. Budak, F., & Bostan, S. (2020). The Effects of Covid-19 Pandemic on Syrian Refugees in Turkey: The Case of Kilis. *Social Work in Public Health*, *35*(7), 579-589. doi: 10.1080/19371918.2020.1806984
13. Buheji, M., da Costa Cunha, K., Beka, G., Mavrić, B., Leandro do Carmo de Souza, Y., Souza da Costa Silva, S., Hanafi, M., & Chetia Yein, T. (2020). The Extent of COVID-19 Pandemic Socio-Economic Impact on Global Poverty. A Global Integrative Multidisciplinary Review. *American Journal of Economics*, *10*(4), 213-224. https://doi.org/10.5923/j.economics.20201004.02
14. Cross, F. L., & Gonzalez Benson, O.G. (2021). The Coronavirus Pandemic and Immigrant Communities: A Crisis That Demands More of the Social Work Profession. *Affilia*, *36*(1), 113–119. https://doi.org/10.1177/0886109920960832
15. Da Mosto, D., Bodini, C., Mammana, L., Gherardi, G., Quargnolo, M., & Fantini, M. P. (2021). Health equity during COVID-19: A qualitative study on the consequences of the syndemic on refugees' and asylum seekers' health in reception centres in Bologna (Italy). *Journal of Migration and Health*, *4*, 100057. https://doi.org/10.1016/j.jmh.2021.100057
16. Das, B. K., Roy, A., Som, S., Chandra, G., Kumari, S., Sarkar, U. K., Bhattacharjya, B. K., Das, A. K., & Pandit, A. (2022). Impact of COVID-19 lockdown on small-scale fishers (SSF) engaged in floodplain wetland fisheries: evidences from three states in India. *Environmental Science and Pollution Research International*, *29*(6), 8452–8463. https://doi.org/10.1007/s11356-021-16074-9
17. Edmonds, J., & Flahault, A. (2021). Refugees in Canada during the First Wave of the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, *18*(3), 947. https://doi.org/10.3390/ijerph18030947
18. Elsaddig, M., & Khalil, A. (2021). Effects of the COVID pandemic on pregnancy outcomes. *Best Practice & Research Clinical Obstetrics & Gynaecology*, *73*, 125-136. https://doi.org/10.1016/j.bpobgyn.2021.03.004

19. Fernandes, N. (2020). Economic effects of coronavirus outbreak (COVID-19) on the world economy. *IESE Business School Working Paper No. WP-1240-E*. https://dx.doi.org/10.2139/ssrn.3557504
20. Finch W.H. and Finch M.E.H. (2020). Poverty and Covid-19: Rates of incidence and deaths in the United States during the first 10 weeks of the Pandemic. *Frontiers in Sociology*, https://doi.org/10.3389/fsoc.2020.00047
21. Freitag, M., & Hofstetter, N. (2022). Pandemic threat and intergroup relations: How negative emotions associated with the threat of COVID-19 shape attitudes towards immigrants. *Journal of Ethnic and Migration Studies*, 48(13), 2985-3004, doi: 10.1080/1369183X.2022.2031925.
22. Garrett, T. M., & Sementelli, A. J. (2022). COVID-19, asylum seekers, and migrants on the Mexico–US border: Creating states of exception. *Politics & Policy*. 50(4), 872-886. https://doi.org/10.1111/polp.12484
23. Gilman, R. T., Mahroof-Shaffi, S., Harkensee, C., & Chamberlain, A. T. (2020). Modelling interventions to control COVID-19 outbreaks in a refugee camp. *BMJ Global Health*, *5*(12), e003727. http://dx.doi.org/10.1136/bmjgh-2020-003727
24. Gupta, A., Zhu, H., Doan, M. K., Michuda, A., & Majumder, B. (2021). Economic impacts of the COVID− 19 Lockdown in a Remittance-Dependent region. *American Journal of Agricultural Economics*, *103*(2), 466-485. https://doi.org/10.1111/ajae.12178
25. Hahn, J. A., Kushel, M. B., Bangsberg, D. R., Riley, E., & Moss, A. R. (2006). BRIEF REPORT: the aging of the homeless population: fourteen-year trends in San Francisco. *Journal of General Internal Medicine*, *21*(7), 775–778. https://doi.org/10.1111/j.1525-1497.2006.00493.x
26. Hayle, S. (2018). A tale of two Canadian cities: Comparing supervised consumption site (SCS) policy making in Toronto and Vancouver. *Drugs: Education, Prevention and Policy*, *25*(5), 397-407. doi: 10.1080/09687637.2017.1292215
27. Hossain, N., Samuel, M., Sandeep, R., Imtiaz, S., & Zaheer, S. (2020). Perceptions, generalised anxiety and fears of pregnant women about corona virus infection in the heart of pandemic, 1-16. https://doi.org/10.1111/imig.12929
28. Iacus, S. M., Natale, F., Santamaria, C., Spyratos, S., & Vespe, M. (2020). Estimating and projecting air passenger traffic during the COVID-19 coronavirus outbreak and its socio-economic impact. *Safety Science*, *129*, 104791. https://doi.org/10.1016/j.ssci.2020.104791
29. Kamberi, F., Jaho, J., Mechili, E. A., Sinaj, E., & Skendo, H. (2020). Effect of Covid-19 pandemic on mental health among Albanian people residing in the country and abroad–Implications for mental care. *Archives of Psychiatric Nursing*, *34*(6), 507-512. doi: 10.1016/j.apnu.2020.08.003
30. Kamis C., Stolte A., West J.S., Fishman S.H., Brown T., Brown T., Farmer H.R (2021), Overcrowding and COVID-19 mortality across U.S. counties: Are disparities

growing over time? *SSM - Population Health*, *15*, 100845 https://doi.org/10.1016/j.ssmph.2021.100845.

31. Khan, M. A., Khan, M. I., Illiyan, A., & Khojah, M. (2021). The Economic and Psychological Impacts of COVID-19 Pandemic on Indian Migrant Workers in the Kingdom of Saudi Arabia. *Healthcare (Basel, Switzerland)*, *9*(9), 1152. https://doi.org/10.3390/healthcare9091152
32. Khan, N., & Faisal, S. (2020), Epidemiology of Corona Virus in the World and Its Effects on the China Economy. *Available at SSRN:* https://ssrn.com/abstract=3548292 or http://dx.doi.org/10.2139/ssrn.3548292
33. Kimani, R. W., Maina, R., Shumba, C., & Shaibu, S. (2020). Maternal and newborn care during the COVID-19 pandemic in Kenya: re-contextualising the community midwifery model. *Human Resources for Health*, *18*,75. https://doi.org/10.1186/s12960-020-00518-3
34. Lauvrak, V., & Juvet, L. K. (2020). Social and economic vulnerable groups during the COVID-19 pandemic. *Norwegian Institute of Public Health*, ISBN (digital): 978-82-8406-093-4
35. Leung, C. S., Ho, M. M., Kiss, A., Gundlapalli, A. V., & Hwang, S. W. (2008). Homelessness and the response to emerging infectious disease outbreaks: lessons from SARS. *Journal of Urban Health, bulletin of the New York Academy of Medicine*, *85*(3), 402–410. https://doi.org/10.1007/s11524-008-9270-2
36. Madhav, N., Oppenheim, B., Gallivan, M., Mulembakani, P., Rubin, E., & Wolfe, N. (2017). Pandemics: Risks, impacts, and mitigation. The International Bank for Reconstruction and Development/The World Bank, Washington (DC): The International Bank for Reconstruction and Development / The World Bank; 2017 Nov 27. Chapter 17. Available from: https://www.ncbi.nlm.nih.gov/books/NBK525302/ doi: 10.1596/978-1-4648-0527-1_ch17
37. Mangrio, E., Zdravkovic, S., & Strange, M. (2022). Working With Refugees' Health During COVID-19—The Experience of Health-and Social Care Workers in Sweden. *Frontiers in Public Health*, *10*:811974. doi: 10.3389/fpubh.2022.811974
38. Manirambona, E., Uwizeyimana, T., Uwiringiyimana, E., & Reddy, H. (2021). Impact of the COVID-19 pandemic on the food rations of refugees in Rwanda. *International Journal for Equity in Health*, *20*(1), 107. https://doi.org/10.1186/s12939-021-01450-1
39. Marchi, M., Magarini, F. M., Chiarenza, A., Galeazzi, G. M., Paloma, V., Garrido, R., Ioannidi, E., Vassilikou, K., de Matos, M. G., Gaspar, T., Guedes, F. B., Primdahl, N. L., Skovdal, M., Murphy, R., Durbeej, N., Osman, F., Watters, C., van den Muijsenbergh, M., Sturm, G., Oulahal, R., … Derluyn, I. (2022). Experience of discrimination during COVID-19 pandemic: the impact of public health measures and psychological distress among refugees and other migrants in Europe. *BMC Public Health*, *22*(1), 942. https://doi.org/10.1186/s12889-022-13370-y
40. McDougal, L., Erikat, J., Yusufi, H., Sahid, R., Streuli, S., &

Fielding-Miller, R. (2022). Understanding the impact of the COVID-19 pandemic on refugee communities in San Diego, California: A participatory action research cross-sectional study. *SSM - Population Health*, *18*, 101110. https://doi.org/10.1016/j.ssmph.2022.101110

41. Mookerjee, D., Chakravarty, S., Roy, S., Tagat, A., & Mukherjee, S. (2021). A culture-centered approach to experiences of the coronavirus pandemic lockdown among internal migrants in India. *American Behavioral Scientist*, *65*(10), 1426-1444. https://doi.org/10.1177/0002764221000392
42. Mosites, E., Parker, E. M., Clarke, K. E., Gaeta, J. M., Baggett, T. P., Imbert, E., Stoltey, J., et al. (2020). Assessment of SARS-CoV-2 infection prevalence in homeless shelters—four US cities, March 27–April 15, 2020. *Morbidity and Mortality Weekly Report*, *69*(17), 521-22. doi: http://dx.doi.org/10.15585/mmwr.mm6917e1
43. Mottaleb, K. A., Mainuddin, M., & Sonobe, T. (2020). COVID-19 induced economic loss and ensuring food security for vulnerable groups: Policy implications from Bangladesh. *PloS One*, *15*(10), e0240709. https://doi.org/10.1371/journal.pone.0240709
44. Nawyn, S., Karaoğlu, E., Gasteyer, S., Mansour, R., Ghassani, A., & Marquart-Pyatt, S. (2022). Resilience to Nested Crises: The Effects of the Beirut Explosion on COVID-19 Safety Protocol Adherence During Humanitarian Assistance to Refugees. *Frontiers in Public Health*, *10*:870158. doi: 10.3389/fpubh.2022.870158
45. Nodoushan, R. J., Alimoradi, H., & Nazari, M. (2020). Spiritual health and stress in pregnant women during the Covid-19 pandemic. *SN Comprehensive Clinical Medicine*, *2*(12), 2528-2534. https://doi.org/10.1007/s42399-020-00582-9
46. Nundy, S., Ghosh, A., Mesloub, A., Albaqawy, G. A., & Alnaim, M. M. (2021). Impact of COVID-19 pandemic on socio-economic, energy-environment and transport sector globally and sustainable development goal (SDG). *Journal of Cleaner Production*, *312*, 127705. ID: covidwho-1253149
47. Perri, M., Dosani, N., & Hwang, S. W. (2020). COVID-19 and people experiencing homelessness: challenges and mitigation strategies. *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne*, *192*(26), E716–E719. https://doi.org/10.1503/cmaj.200834.
48. Ram, K., & Yadav, S. (2021). The impact of COVID-19 on poverty estimates in India: a study across caste, class and religion. *Contemporary Voice of Dalit*, https://doi.org/10.1177/2455328X211051432
49. Rasmussen, S. A., & Jamieson, D. J. (2020). Caring for women who are planning a pregnancy, pregnant, or postpartum during the COVID-19 pandemic. *JAMA*, *324*(2), 190-191. doi:10.1001/jama.2020.8883
50. Ravens-Sieberer, U., Kaman, A., Erhart, M., Devine, J., Schlack, R., & Otto, C. (2022). Impact of the COVID-19 pandemic on quality of life and mental health in children and adolescents in Germany. *European Child & Adolescent psychiatry*, 31, 879-889.

https://doi.org/10.1007/s00787-021-01726-5

51. Shokoohi, M., Osooli, M., & Stranges, S. (2020). COVID-19 Pandemic: What Can the West Learn From the East?. *International Journal of Health Policy and Management*, *9*(10), 436–438. https://doi.org/10.34172/ijhpm.2020.85
52. Sohrabi, C., Alsafi, Z., O'Neill, N., Khan, M., Kerwan, A., Al-Jabir, A., Iosifidis, C., & Agha, R. (2020). World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *International Journal of Surgery (London, England)*, *76*, 71–76. https://doi.org/10.1016/j.ijsu.2020.02.034
53. Supriatna, E. (2020). Socio-economic impacts of the COVID-19 pandemic: the case of Bandung City. *Journal of Governance*, *5*(1), 61-70. http://dx.doi.org/10.31506/jog.v5i1.8041
54. Tsai, J., & Wilson, M. (2020). COVID-19: a potential public health problem for homeless populations. *The Lancet. Public Health*, *5*(4), e186–e187. https://doi.org/10.1016/S2468-2667(20)30053-0
55. Uphoff, E. P., Lombardo, C., Johnston, G., Weeks, L., Rodgers, M., Dawson, S., Seymour, C., Kousoulis, A. A., & Churchill, R. (2021). Mental health among healthcare workers and other vulnerable groups during the COVID-19 pandemic and other coronavirus outbreaks: A rapid systematic review. *PloS one*, *16*(8), e0254821. https://doi.org/10.1371/journal.pone.0254821
56. Wei, X., Li, L., & Zhang, F. (2021). The impact of the COVID-19 pandemic on socio-economic and sustainability. *Environmental Science and Pollution Research*, *28*, 68251-68260. https://doi.org/10.1007/s11356-021-14986-0
57. Wernly, B., Wernly, S., Magnano, A., & Paul, E. (2022). Cardiovascular health care and health literacy among immigrants in Europe: a review of challenges and opportunities during the COVID-19 pandemic. *Zeitschrift fur Gesundheitswissenschaften = Journal of Public Health*, *30*(5), 1285–1291. https://doi.org/10.1007/s10389-020-01405-w
58. Wildman J. (2021). COVID-19 and income inequality in OECD countries. *The European journal of health economics: HEPAC: health economics in prevention and care*, *22*(3), 455–462. https://doi.org/10.1007/s10198-021-01266-4
59. Wood, L. J., Davies, A. P., & Khan, Z. (2020). COVID-19 precautions: easier said than done when patients are homeless. *The Medical Journal of Australia*, *212*(8), 384–384.e1. https://doi.org/10.5694/mja2.50571
60. Yadav, A., & Iqbal, B. A. (2021). Socio-economic scenario of South Asia: An overview of impacts of COVID-19. *South Asian Survey*, *28*(1), 20-37. DOI: 10.1177/0971523121994441
61. Zainiyah, Z., & Susanti, E. (2020). Anxiety in Pregnant Women During Coronavirus (Covid-19) Pandemic in East Java, Indonesia. *Majalah Kedokteran Bandung-Mkb-Bandung Medical Journal*, *52*(3),149-153. ID: covidwho-1055318