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MORALITY BEFORE KNOWLEDGE

The impact of COVID-19 on the physical health, psychological well-being, and financial stability of host and forcibly displaced Myanmar nationals (FDMN) communities

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ABSTRACT

Background: Cox's Bazar, a coastal district in southern Bangladesh, is highly vulnerable to natural disasters and socio-economic challenges. The region hosts a significant number of forcibly displaced Myanmar nationals (FDMNs) living in overcrowded and resource-constrained conditions. The COVID-19 pandemic has exacerbated existing vulnerabilities in both host and FDMN communities, affecting their physical health, mental well-being, and financial stability. This study explores the multidimensional impacts of the pandemic on these communities. **Methods:** This qualitative study (Jan–Apr 2022) was conducted in four upazilas of Cox's Bazar. Data were collected through 16 FGDs and KIIs with about 200 participants from host and FDMN communities. **Findings:** Survey findings reveal that 73% of respondents reported experiencing COVID-19-related physical symptoms, with fever, dry cough, fatigue, sore throat, and anosmia being the most common. Approximately 61% of participants had mild to severe symptoms, though many recovered without medical intervention. The pandemic also triggered widespread psychological distress. Respondents reported heightened levels of anxiety, depression, loneliness, and uncertainty during the lockdown period. Economically, the impact was equally severe. Loss of income, increased food insecurity, and joblessness were reported by a large portion of the population. The tourism sector, a vital component of Cox's Bazar's economy, was significantly disrupted. **Conclusion:** About 57% of host community members indicated that their livelihoods were directly or indirectly affected by the lockdown and related containment measures. Government and humanitarian agencies must adopt a multidimensional response framework that addresses the physical, psychological, and economic needs of both host and FDMN populations to ensure long-term recovery and resilience. **Novelty/Originality of this article:** This study compares host and FDMN communities in Cox's Bazar, assessing COVID-19 impacts across physical, psychological, and financial dimensions.

KEYWORDS: COVID-19 Pandemic; Cox's Bazar; host and FDMN communities; physical and psychological impact; socioeconomic vulnerability.

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1. Introduction

The emergence of the COVID-19 pandemic has created unprecedented global disruption, affecting public health systems, economies, and the psychosocial well-being of populations (Peng, 2020). Bangladesh, a lower-middle-income country with densely populated urban and rural regions, has also endured widespread consequences (Ruszczyk et al., 2021). Among its most vulnerable regions is Cox's Bazar, a coastal district located in the southeastern part of the country, which is both disaster-prone and home to a large population of Forcibly Displaced Myanmar Nationals (FDMNs) residing in overcrowded refugee camps since 2017. The convergence of poverty, limited healthcare access, and high population density in both host and refugee communities has amplified the impact of the pandemic in this region (Roy et al., 2024).

Cox's Bazar is characterized by fragile infrastructure and a local economy reliant primarily on fishing, agriculture, and tourism. The imposition of lockdown measures in March 2020 severely disrupted these income-generating activities. Local fishermen and small business owners—particularly those involved in the dry fish trade and tourism—faced severe financial setbacks (Miah et al., 2023). Many households struggled with food insecurity, and some were forced into starvation due to the abrupt loss of livelihood. Compounding this crisis was the region's relatively low literacy rate and inadequate awareness of public health messaging, which hindered preventive behaviors and timely access to care (Shuvo et al., 2024). Since the influx of approximately 700,000 Rohingya refugees in 2017, humanitarian operations in Cox's Bazar have operated under intense pressure to meet basic needs. When COVID-19 struck, humanitarian agencies were compelled to scale down operations to essential services, leaving many camp residents without adequate support. As of November 14, 2021, official records indicate 73,790 confirmed COVID-19 cases and 34 deaths among FDMNs, alongside 161,258 cases and 255 deaths in the host community. However, the actual numbers may be higher due to underreporting and limited testing availability (Habib, 2021).

In addition to its physical health toll, the pandemic has had far-reaching psychological and economic consequences. School closures, job losses, and movement restrictions contributed to rising levels of stress, depression, and anxiety, particularly among youth, the elderly, and economically marginalized households. For families who lost their primary earners, the crisis led to deepening poverty and greater dependence on aid. Children and adolescents experienced disruptions in learning due to limited access to digital infrastructure, making remote education initiatives largely inaccessible in rural and camp settings (Ngongolo, 2023). Unlike most previous studies that examine either refugee populations or host communities separately, this study uniquely integrates both populations within a single geographic and socio-economic context. This comparative approach allows for a more comprehensive understanding of the multidimensional impacts of COVID-19 on physical, psychological, and financial well-being.

This study is also relevant to broader discussions on social sustainability, social justice, and environmental equity, as it highlights how systemic shocks such as the COVID-19 pandemic disproportionately affect marginalized and vulnerable populations. The findings contribute to understanding community resilience and eco-welfare challenges in disaster-prone and humanitarian settings like Cox's Bazar. The pandemic also exposed major structural weaknesses in healthcare preparedness and social protection systems in Bangladesh, particularly in geographically vulnerable and resource-constrained regions such as Cox's Bazar. Due to overcrowded living conditions, inadequate sanitation facilities, and limited healthcare accessibility, both host and FDMN communities faced heightened risks of virus transmission and delayed treatment-seeking behavior. Maintaining preventive measures such as social distancing, home isolation, and regular hygiene practices proved especially difficult in refugee camps where large numbers of people share limited space and resources. Previous studies have indicated that humanitarian settings are particularly susceptible to infectious disease outbreaks because emergency response systems are often overburdened and under-resourced during large-scale crises (Raman et

al., 2025; Shah et al., 2025). In addition to healthcare challenges, the pandemic severely disrupted social and educational systems within the region. Prolonged school closures interrupted formal learning and reduced opportunities for social interaction among children and adolescents. In many low-income households, lack of internet connectivity, digital devices, and educational support limited participation in remote learning activities. Such disruptions not only affected academic progress but also contributed to emotional stress, social isolation, and uncertainty regarding future opportunities. Researchers have emphasized that educational interruptions during public health emergencies may have long-term consequences for psychosocial development and social mobility among vulnerable populations (Jiang et al., 2024). The economic consequences of the pandemic were equally profound in Cox's Bazar, where a significant portion of the population depends on informal labor, tourism, fisheries, transportation, and small-scale businesses for daily income. Lockdown measures and mobility restrictions reduced employment opportunities and weakened household purchasing capacity, thereby increasing dependence on humanitarian assistance and social safety-net programs. Similar trends were observed globally, particularly in low- and middle-income countries where informal workers experienced substantial income losses during the pandemic period (Rahman & Uddin, 2022). The reduction of economic activities also intensified existing inequalities between socially advantaged and disadvantaged groups, further exposing the fragile livelihood conditions of marginalized communities. Furthermore, the psychological effects of COVID-19 extended beyond fear of infection and illness. Uncertainty regarding employment, prolonged isolation, restricted mobility, and reduced social communication contributed to increased levels of stress, anxiety, loneliness, and depression among community members. Refugee populations were especially vulnerable because many had already experienced trauma, forced displacement, and social marginalization prior to the pandemic. Consequently, the combined effects of displacement and pandemic-related restrictions created an additional layer of psychological burden within FDMN communities. These multidimensional challenges demonstrate that the impact of COVID-19 in Cox's Bazar cannot be understood solely from a biomedical perspective but must also be analyzed within broader socio-economic and humanitarian contexts (Siddiquee et al., 2024). This study aims to comprehensively examine the multifaceted impacts of the COVID-19 pandemic on both the host and FDMN communities in Cox's Bazar. Specifically, it seeks to explore the physical, psychological, and financial effects of the pandemic through field surveys and qualitative interviews. Understanding these impacts is critical for developing inclusive, evidence-based policies and response mechanisms that address the needs of both vulnerable groups in current and future health emergencies.

1.1 Justification of the study

Coronavirus disease 2019 (COVID-19), caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), rapidly evolved into a global pandemic by the end of 2019. In Bangladesh, the first confirmed case was reported on March 8, 2020. According to data from the World Health Organization (WHO), as of December 8, 2021, Bangladesh had recorded 1,578,011 confirmed cases and 28,010 deaths attributed to COVID-19. The pandemic has significantly disrupted global systems, but its impacts have been particularly severe in developing nations like Bangladesh, where pre-existing vulnerabilities—such as poverty, inadequate healthcare infrastructure, and limited access to education—have amplified the health and socio-economic consequences of the outbreak (Hu et al., 2021).

Cox's Bazar, home to both local Bangladeshi citizens and nearly one million FDMNs, represents one of the most at-risk regions in the country. The dual burden of hosting a large refugee population and coping with endemic poverty and weak healthcare systems has made this district especially vulnerable to the shocks brought on by COVID-19. Children and adolescents in both host and refugee communities have experienced disruptions in education, nutrition, and psychosocial development due to prolonged school closures and reduced access to essential services. Emerging evidence indicates that the pandemic has

disproportionately affected marginalized groups, further straining Bangladesh's fragile health and social security systems (Planning et al., 2013). The compounded impact of COVID-19 on physical health, mental well-being, and economic stability has been acutely felt by families across both communities in Cox's Bazar. Almost every household has experienced direct or indirect consequences of the pandemic, whether through illness, loss of income, increased psychological stress, or restricted access to basic needs and services. Despite the significance of these effects, there remains a dearth of localized, empirical studies that holistically capture the breadth and depth of the pandemic's impact on such vulnerable populations (Su & Zhou, 2023).

In this context, the present study seeks to fill a critical knowledge gap by investigating the multidimensional impacts of COVID-19 on both host and FDMN populations in Cox's Bazar. The study aims to assess the pandemic's effects from physical, psychological, and financial perspectives, offering an in-depth understanding of how daily lives have been altered in one of Bangladesh's most fragile regions. This evidence is essential for informing inclusive, context-sensitive policy responses and for guiding future preparedness and resilience-building efforts.

1.2 Literature review

The global outbreak of COVID-19 has prompted a significant volume of academic and policy-driven research focused on the multidimensional impacts of the pandemic. A substantial portion of this literature emphasizes the socio-economic and psychological consequences, particularly among vulnerable populations in low- and middle-income countries. The pandemic's containment strategies, such as lockdowns, movement restrictions, and social distancing, have had far-reaching effects on individuals and communities across the globe. However, these impacts have been disproportionately severe among the poor, marginalized, and food-insecure populations, especially in remote rural areas of South Asia and Africa, where nearly 80% of the world's poorest reside (Padhan & Prabheesh, 2021).

A study explores the key factors influencing food preferences and eating behaviours among adolescents in the FDMN camp in Cox's Bazar, Bangladesh. Conducted with 545 participants aged 10–19, the research identified significant nutritional deficiencies and linked eating habits to factors such as peer influence, cultural beliefs, education, income, and ration availability. The findings emphasize the need for targeted nutritional interventions tailored to this vulnerable population (Islam et al., 2024). Another study investigates the most vulnerable groups within the Rohingya and host communities of Cox's Bazar, Bangladesh, during the COVID-19 pandemic. Using qualitative methods and stakeholder input, it identified groups such as single female-headed households, pregnant and lactating women, persons with disabilities, the elderly, and adolescents as the most affected. The research highlights the intersection of economic hardship, gender norms, mobility issues, and disrupted education as key drivers of vulnerability. These findings offer valuable insights for humanitarian efforts and policy planning (Sultana et al., 2023). A study explores the challenges of implementing WHO's Infection Prevention and Control (IPC) guidelines in the Kutupalong Rohingya refugee camp in Cox's Bazar, Bangladesh. Despite efforts by the government and aid agencies, adherence to health protocols remains low due to psychological trauma, deep-rooted mistrust, inadequate infrastructure, and poor sanitation. Based on interviews, surveys, and field observations, the study emphasizes the need to consider the refugees' socio-cultural and psychological context when designing effective, resilient health interventions (Akter et al., 2021a). Another study examines the vulnerability of marginalized groups in Rohingya and host communities in Cox's Bazar during the COVID-19 pandemic using a Gender-Based Vulnerability Index (GBVI). Data revealed that Rohingya households faced significantly higher vulnerability, with 65% classified as acutely vulnerable compared to only 2% of host households. Female-headed households, the elderly, and persons with disabilities were the most affected. The findings stress the importance of identifying and addressing the specific needs of these groups

through targeted interventions and inclusive policy measures (Nasar et al., 2022). A similar study investigates the long-term mental health impacts of human rights violations on Rohingya refugees who fled Myanmar in 2017. Based on interviews with healthcare professionals, it reveals that Rohingya individuals experienced trauma before, during, and after migration, with ongoing stressors in refugee camps in Bangladesh. The findings highlight a severe lack of mental health services and numerous barriers to care, emphasizing the need for trauma-informed, holistic mental health interventions. The research underlines how persistent exposure to violence and displacement causes continuous psychological distress requiring targeted public health responses (Green et al., 2024). Globally, the COVID-19 pandemic has disproportionately affected displaced and marginalized populations living in humanitarian settings due to overcrowding, limited healthcare access, and socio-economic instability. According to the World Health Organization (WHO), the pandemic significantly disrupted mental health services worldwide, particularly among vulnerable groups such as refugees, women, and children. Fear of infection, social isolation, unemployment, and uncertainty contributed to increasing levels of anxiety, depression, and psychological distress across affected communities (Sierra et al., 2023a; Barron et al., 2022). Previous studies conducted in refugee-hosting regions have demonstrated that pandemic-related restrictions intensified food insecurity, unemployment, and healthcare inequities. Refugee camps were particularly vulnerable because maintaining social distancing and adequate hygiene practices was extremely difficult in densely populated settlements. These structural vulnerabilities increased both infection risk and long-term psychosocial stress among displaced populations (Yasmin et al., 2023; Zhou et al., 2023). Moreover, emerging evidence suggests that the psychological consequences of COVID-19 may persist even after recovery from infection. Studies have identified increased risks of anxiety, depression, sleep disorders, and stress-related conditions among COVID-19 survivors, emphasizing the need for integrated mental health interventions during and after public health emergencies (Bourmistrova et al., 2022; Penninx et al., 2022). The COVID-19 pandemic further exposed inequalities in healthcare access, economic stability, and psychosocial well-being among vulnerable populations living in humanitarian settings. Refugee camps faced particular challenges in maintaining preventive measures due to overcrowding, poor sanitation, and limited healthcare infrastructure. In addition, lockdown measures disrupted education, employment, and social support systems, disproportionately affecting low-income and displaced populations (Frey et al., 2024; Sierra et al., 2023b). Previous studies have also highlighted increased levels of anxiety, depression, loneliness, and financial insecurity during the pandemic period. However, limited research has comparatively examined the physical, psychological, and financial impacts of COVID-19 among both host and refugee communities within the same geographic context. Therefore, this study aims to address this important research gap in Cox's Bazar, Bangladesh (Müller et al., 2025; Kupcova et al., 2023).

In summary, the existing body of literature clearly outlines the multifaceted impact of COVID-19 in regions like Cox's Bazar, emphasizing the urgency for holistic interventions that address not only physical health but also the economic and psychosocial well-being of affected communities. However, there remains a critical need for more localized and comprehensive studies to further understand these dynamics and to inform policy actions that are both inclusive and sustainable. However, most existing studies have focused either on refugee populations or host communities in isolation. Limited research has attempted to simultaneously compare both groups within the same setting, particularly across physical, psychological, and financial dimensions. This gap highlights the need for integrated comparative studies such as the present research.

To explore the impact of COVID-19 on physical, psychological, and financial aspects in host and FDMN communities in Cox's Bazar. For explore the insights of the host & FDMN population on the impact of Covid-19 on people's social lives. For explore the effect of Covid-19 on the economic status of the host & FDMN population in Cox's Bazar. For assess the psychological impacts of Covid-19 on the host & FDMN population in Cox's Bazar.

2. Methods

2.1 Study design

This study is a qualitative study. Samples were determined based on saturation of data. We have considered 15–20 participants during the discussion as FGD along with key informant interview (KII). This study has been conducted in Cox's Bazar district, which covered 4 upazilas. Cox's Bazar Samar, Ramu, Ukhiya, and Teknaf upazillas were reached through this study. The study population for this study has been chosen from the host Bangladeshi nationals and FDMN population living in Cox's Bazar. The inclusion criteria were both males and females from 18 to 59 years old (both host & FDMN people will be included in this study). Besides, this study segregated the respondents based on their occupation to identify the impact of Covid-19 in different sectors of Cox's Bazar. The exclusion criteria were disabled persons who were not able to provide information and those who refused to give informed consent. The study duration is four months, from January 1st, 2022, to April 30th, 2022.

2.2 Data Analysis techniques, data collection, methods and techniques

Samples were determined based on saturation of data. In each discussion, tentatively 10-12 participants were taken into consideration. So, targeting tentatively 200 participants was covered through this study. This study conducted 4 discussions in each upazilla, which sums up to 16 in 4 upazillas. In the case of camp location, 2 group discussions were conducted in the host and 2 discussions were conducted at the camp level. In each discussion, there were around 10-12 participants with a ratio of male to female of 1:1. In total, 200 respondents (100 male & 100 female) were reached through this study. Fig. 1 shows distribution of focus group discussions (FGDs) across study areas in Cox's Bazar, Bangladesh, including host and FDMN communities.

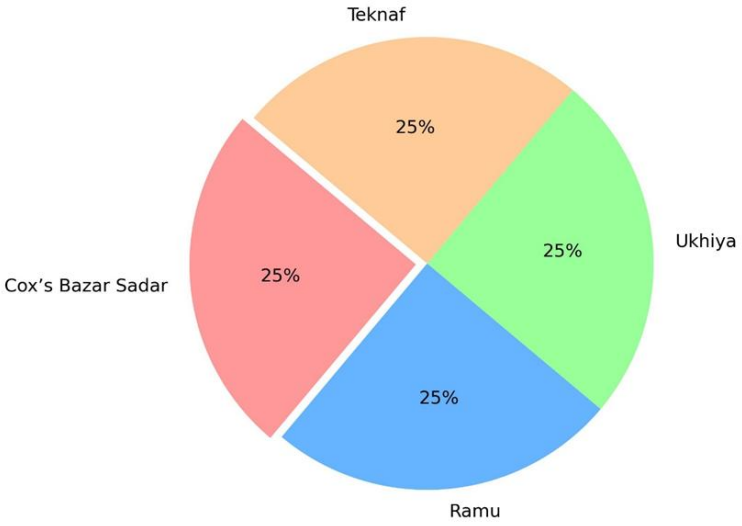

Fig. 1 Distribution of focus group discussions across study areas in Cox's Bazar.

2.3 Limitations and ethical issue

The research, though unique in its attempt to analyze the financial impacts of Covid-19 in Cox's Bazar, Bangladesh, is, however, not above limitations. Firstly, as the research attempts to analyze a very recent phenomenon, the possibility of having a limited number of academic literatures relating to the research topic is high. Hence, given the time constraint for the research, the study focuses on the qualitative methods to analyze the financial impact, rather than applying both quantitative and qualitative methods to fully

utilize the FGDs & KIIs. The ethical issues as follows: approval from camp authority was taken prior to FGD in case of FDMN camps; consent was taken from the respondents before collection of data; the objectives of the study were explained briefly to the respondents; privacy and confidentiality were ensured and maintained strictly; respondents had every right to agree or disagree to respond to the questions.

2.4 Data analysis

All qualitative data from Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) were transcribed verbatim and translated into English where necessary. The data were analyzed using thematic analysis. Initially, open coding was performed to identify meaningful units of information from the transcripts. These codes were then grouped into categories and further refined into broader themes corresponding to physical, psychological, and financial impacts of COVID-19. Data saturation was considered achieved when no new themes or concepts emerged from additional FGDs. To ensure validity and reliability, triangulation was applied by comparing responses across different participant groups and study locations. Additionally, peer debriefing among the research team was conducted to reduce interpretive bias and improve consistency in theme development. Member checking was also performed with selected participants to verify the accuracy and interpretation of the collected responses.

3. Results and Discussion

3.1 Physical impact of COVID-19

The COVID-19 pandemic has significantly impacted the physical well-being of both the host and FDMN communities in Cox's Bazar. Based on survey findings, approximately 73% of respondents reported experiencing physical symptoms associated with COVID-19, with no statistically significant difference between the host and refugee communities in terms of infection rates or physical effects. However, differences in symptom reporting and recovery experiences were observed between the two populations (Mistry, 2021).

Respondents commonly highlighted that the pandemic had transformed their daily lives. Before COVID-19, there were no social distancing mandates, compulsory mask usage, or lockdown restrictions. Since the outbreak in March 2020, such measures have reshaped interactions and mobility. According to one community leader, "More or less all were affected, and symptoms differed from one person to another, creating confusion and fear." Among those reporting physical challenges, 87% mentioned fever—ranging from mild to severe—as the most frequent symptom. Elderly individuals (above 40 years) represented 57% of those affected by fever. Medical personnel in the region also noted two fever patterns: one that persisted into the second week and another resembling a "saddleback" pattern similar to that seen in dengue. The implications of these fever variations in relation to complications remain uncertain.

Common flu-like symptoms, such as fever, headache, muscle ache, sneezing, and cough, were frequently reported. Notably, anosmia (loss of smell) and ageusia (loss of taste) were key differentiating symptoms in COVID-19 cases, especially among youth. Over 80% of respondents from both host and refugee communities reported experiencing a loss of smell, particularly in earlier waves of the virus. However, those infected with the Omicron variant noted fewer incidences of anosmia. Dry cough was another prevalent symptom, described as a persistent, irritating tickle in the throat. Respondents indicated that such coughing often lacked relief and was typically deeper and more severe than ordinary colds. Tiredness and fatigue were reported by nearly 90% of symptomatic individuals, particularly among older respondents. When asked to rate their energy levels on a scale of 1 to 10, many indicated a drop from a pre-infection score of 10 to around 4, suggesting an average 50% decline in physical energy during infection. Other reported symptoms included as follows.

Sore throat, identified by 68% of respondents as a key symptom, though some initially dismissed it as seasonal flu. Headache, experienced by 37%, mostly as a mild discomfort, though more severe in the elderly. Diarrhea, reported by 22% of COVID-positive respondents, often correlate with more severe cases. Breathing difficulties, a significant concern among 33% of elderly respondents. Of these, 74% required hospitalization, and 84% needed oxygen therapy.

A small percentage were admitted to intensive care units. The study also highlighted obesity as a risk factor for severe COVID-19 outcomes, particularly among children. Obese individuals had a 3.07 times higher risk of hospitalization and a 1.42 times higher risk of developing serious complications. Access to physical activity during the lockdown was significantly hindered. Respondents indicated that children's participation in physical activities decreased, with many spending extended hours engaged in sedentary behavior such as mobile gaming. Using a comparison of pre- and during-lockdown activity levels, caregivers noted a sharp decline in physical movement and an increase in screen time. Respondents also cited limited access to outdoor facilities and group therapies as barriers to maintaining physical health. Of the total respondents in Cox's Bazar, 61% acknowledged having experienced COVID-19 symptoms, but only 42% from the host community underwent testing, with 37% testing positive. Those infected shared various common physical effects, often compounded by underlying health conditions like cardiovascular disease, diabetes, chronic respiratory disorders, and cancer. These comorbidities heightened the risk of severe illness, particularly when coupled with lifestyle factors such as poor diet and physical inactivity.

The lockdown-induced sedentary lifestyle and increased reliance on processed food were identified as potential contributors to metabolic disorders. Research emphasizes that reduced physical activity and prolonged sedentary behavior are linked to poor health outcomes, both physically and mentally. On the contrary, consistent physical activity, healthy eating habits, adequate rest, and mindfulness practices are essential for both prevention and recovery from COVID-19 (van Bakel et al., 2021). The physical health experiences identified in this study are comparable to findings reported in other refugee-hosting and humanitarian settings during the COVID-19 pandemic. Similar studies conducted among Syrian refugees in Jordan and displaced populations in Sub-Saharan Africa reported widespread respiratory symptoms, fatigue, reduced physical mobility, and limited access to healthcare services due to overcrowding and resource shortages. In Cox's Bazar, however, the combination of high population density, climate vulnerability, poor sanitation, and fragile healthcare infrastructure intensified these challenges further. Although both host and FDMN communities experienced significant physical suffering, refugee populations appeared more vulnerable due to restricted mobility, dependency on humanitarian assistance, and limited healthcare accessibility within camp settings (Akter et al., 2021b). Conversely, members of the host community experienced relatively greater healthcare access but were more affected by disruptions in occupational activities such as tourism, transportation, and fisheries, which indirectly influenced physical well-being through nutritional insecurity and stress-related illnesses. These findings demonstrate that the physical impact of COVID-19 in humanitarian contexts cannot be separated from broader socio-economic inequalities and structural vulnerabilities. The study also highlights important policy implications regarding healthcare preparedness in disaster-prone regions. Strengthening decentralized healthcare systems, ensuring emergency medical supply chains, expanding community-level awareness programs, and improving access to physical rehabilitation services are critical for enhancing resilience among vulnerable populations. Furthermore, the findings support the argument that future pandemic preparedness strategies should integrate refugee populations into national public health planning rather than treating camps as isolated humanitarian spaces. Such inclusive approaches are essential for reducing health inequalities and promoting long-term public health sustainability in regions like Cox's Bazar (Eze et al., 2023).

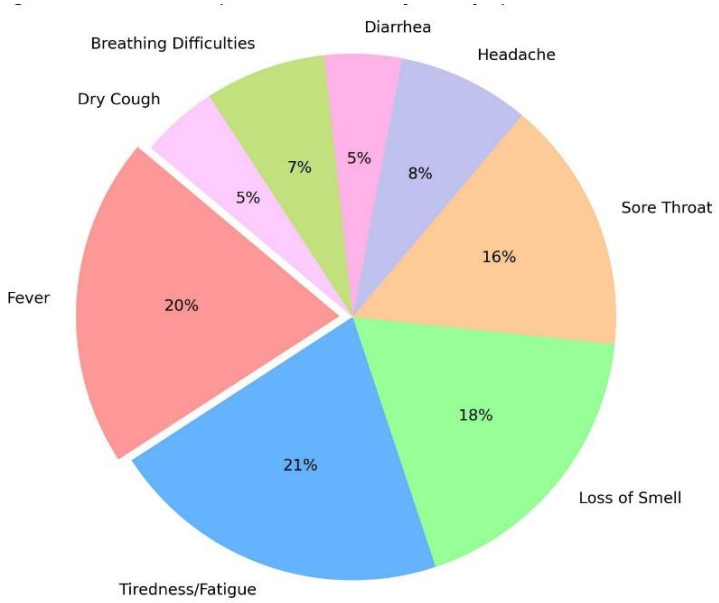

Fig. 2 Distribution of reported COVID-19 physical symptoms in Cox's Bazar

Fig. 2 shows distribution of reported COVID-19 physical symptoms among host and FDMN respondents in Cox's Bazar, Bangladesh. In conclusion, the physical impact of COVID-19 on both the host and refugee populations in Cox's Bazar is profound. Affected individuals experienced a range of symptoms from mild fatigue to severe respiratory distress, compounded by pre-existing conditions and inadequate access to healthcare and exercise. These findings underscore the need for integrated wellness strategies—including nutrition, physical rehabilitation, and mental health care—to support recovery and long-term resilience in pandemic-affected communities.

3.2 Psychological impact of COVID-19

This study examined the psychological effects of the COVID-19 pandemic on both host and refugee communities in Cox's Bazar through Focus Group Discussions (FGDs). Historically, pandemics have caused widespread panic, economic downturns, and social disruptions across the globe. The declaration of COVID-19 as a global pandemic by the WHO in 2019 compelled many countries to impose lockdowns and restrict movement to curb virus transmission. These public health interventions, while necessary, have had profound economic, social, and psychological consequences. Consistent with previous epidemic outbreaks, the implementation of quarantine and social distancing measures, although vital, contributed to heightened psychological distress among affected populations.

Findings from this study revealed increased levels of stress, anxiety, and depression during the partial lockdown phase, particularly among vulnerable groups such as separated individuals, students, widows, the unemployed, and housewives. Informal workers globally reportedly lost an average of 60% of their income in the first month of the pandemic, intensifying financial insecurity and psychological strain. The extended period of social isolation and restricted mobility was perceived as detrimental to mental well-being, with participants reporting feelings of loneliness, frustration, and uncertainty. For instance, a student from the host community expressed, "That time I felt that I was living in prison, no movement, and no social communication. Oh, I don't want to remind you." Similarly, Kamal, a resident of Ukhia, stated, "Sometimes we feel that death is better than following so many restrictions and bindings." Bangladesh, a lower-middle-income country with a densely populated environment, allocates only 4.9% of its budget to the health sector, with approximately 60% of healthcare expenditures borne by households. Such constraints exacerbate emotional challenges during lockdown periods. This study specifically explored key psychological factors including loneliness, social isolation, risk perception, financial

distress, and overall psychological distress within Cox's Bazar. The research also investigated demographic variations in psychological impact to provide comprehensive insights (Titumir, 2021).

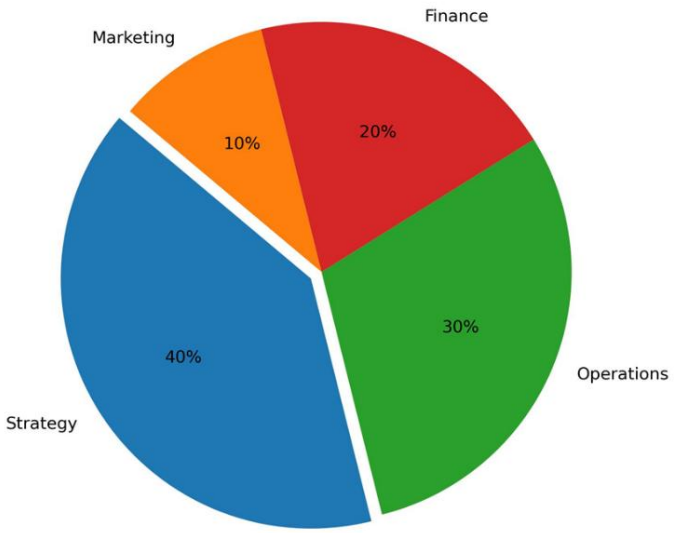

Fig. 3 Distribution of discussion topics.

Fig. 3 shows key discussion themes explored during FGDs, highlighting major psychological, social, and economic issues related to COVID-19 impacts. Respondents were further queried about the effects of access restrictions—such as closure of schools, limited outdoor activities, and lack of specialized facilities—on their children's mental health. A housewife, Sokhina, noted, "Children were always angry as it was difficult to maintain social distance from them, but we had to pressure them to follow it, which depressed them mentally." Approximately 97% of host community respondents and 94% of refugee respondents acknowledged the negative psychological impact of the pandemic on their children's mental health. This study contributes valuable knowledge about the psychological well-being of populations in Cox's Bazar during the lockdown, highlighting the vulnerabilities of lower-middle-income groups. These findings are critical for informing strategies that address the intertwined physical, psychological, social, and economic challenges presented by the COVID-19 pandemic and its aftermath.

The pervasive fear of infection significantly impacted mental health. One participant shared, "If anybody tested positive, people think that he/she will die. Can you imagine that moment? We could not sleep properly in tension." Loneliness—a state defined by the absence of meaningful social connections—emerged as a significant factor influencing psychological distress. The enforced physical distancing measures heightened feelings of social ostracization; about one-third of the host population reported loneliness post-outbreak. Interestingly, no significant rise in loneliness was observed within the refugee community. Social relationships are fundamental to human well-being, and their disruption can lead to social isolation—a lack of engagement within social networks. Both loneliness and social isolation, while distinct, often co-occur and negatively affect mental health. In this study, 68% of respondents from both communities referenced social relationships in relation to psychological impact, with 57% reporting confusion and anxiety stemming from future uncertainties. Rasel from Teknaf recounted, "When I was positive, people started to avoid me; even they didn't want to talk with me, maintaining distance. I was fully alone at that time (Andersen et al., 2021)." The psychological consequences identified in this study are consistent with global evidence showing that pandemics disproportionately affect socially marginalized and economically vulnerable populations. Research conducted among refugee populations in Lebanon, Palestine, and Uganda similarly reported elevated levels of anxiety, depression, fear, loneliness, and uncertainty during COVID-19 lockdown periods.

However, the present findings reveal important contextual differences between host and FDMN communities in Cox's Bazar. While both groups experienced psychological distress, the host community appeared to report higher levels of loneliness and social isolation, largely due to reduced social communication, employment instability, and fear of infection within local neighborhoods. In contrast, refugee respondents frequently emphasized uncertainty regarding humanitarian support, mobility restrictions, and future survival concerns rather than social isolation alone. This difference may reflect the pre-existing collective living patterns within refugee camps, where social interaction continued despite movement restrictions. The findings therefore suggest that psychological distress in humanitarian settings is shaped not only by disease outbreaks but also by broader social environments, livelihood insecurity, and displacement-related vulnerabilities. From a theoretical perspective, the study reinforces the social determinants of mental health framework, which argues that economic inequality, social exclusion, and environmental insecurity significantly influence psychological well-being. The results further highlight the importance of integrating mental health services into humanitarian response systems, particularly during large-scale emergencies. Policymakers and humanitarian agencies should prioritize community-based psychosocial support, awareness campaigns, child-focused mental health interventions, and accessible counseling services for both host and refugee populations. Strengthening social support networks and reducing stigma associated with infectious diseases are equally important for improving long-term psychological resilience in vulnerable coastal and humanitarian regions (Tan et al., 2023).

Economic instability further exacerbated psychological distress. Financial difficulties arising from unemployment, low wages, and inflation heightened stress levels. Restricted access to essential resources increased feelings of stigmatization, anger, and agitation, with 61% of respondents citing financial distress as a significant concern. Finally, risk perception concerning infectious disease significantly influenced psychological responses. Understanding how populations perceive the risk of infection is vital, as it shapes public behavior and mental health outcomes. Approximately 78% of respondents from both host and refugee communities reported heightened risk perception regarding COVID-19 infection, reflecting widespread anxiety and fear. The psychological findings of this study are consistent with global evidence indicating that the COVID-19 pandemic substantially disrupted mental health systems and increased emotional distress worldwide. WHO reports indicate that mental health services were partially or fully disrupted in most countries during the pandemic, while demand for psychosocial support simultaneously increased. Such findings reinforce the importance of integrating mental health support into emergency preparedness and humanitarian response frameworks (Chen et al., 2025; Stepanova et al., 2024).

3.3 Financial impact of COVID-19

Cox's Bazar, Bangladesh, hosts nearly one million Rohingya refugees living in densely populated conditions across two registered and 32 unregistered camps, alongside impoverished host communities. This unique demographic landscape places both populations at heightened risk for the rapid spread of infectious diseases. This study explores the financial and economic repercussions of the COVID-19 pandemic on these communities, based on quantitative data and qualitative insights. Food insecurity emerged as a critical concern, with approximately 91% of respondents from both communities identifying it as one of the most severe impacts of COVID-19. Interviewees consistently reported a decline in food availability, driven by reductions in food rations and diminished capacity to purchase food due to income losses. Lockdown and containment measures exacerbated the vulnerabilities of marginalized groups, particularly in coastal areas like Cox's Bazar, where livelihoods are predominantly informal. The resulting unemployment and income loss increased poverty levels across urban and rural settings, disproportionately affecting individuals with limited access to social safety nets or alternative income sources (Prosekov & Ivanova, 2018). The pandemic period was further

complicated by social phenomena such as panic buying, stigma, fear, and discrimination. Disruptions to healthcare services were notable, with frontline workers—including doctors, healthcare staff, law enforcement, and government officials—experiencing high rates of infection, isolation, and mortality, which added strain to the community and public health system.

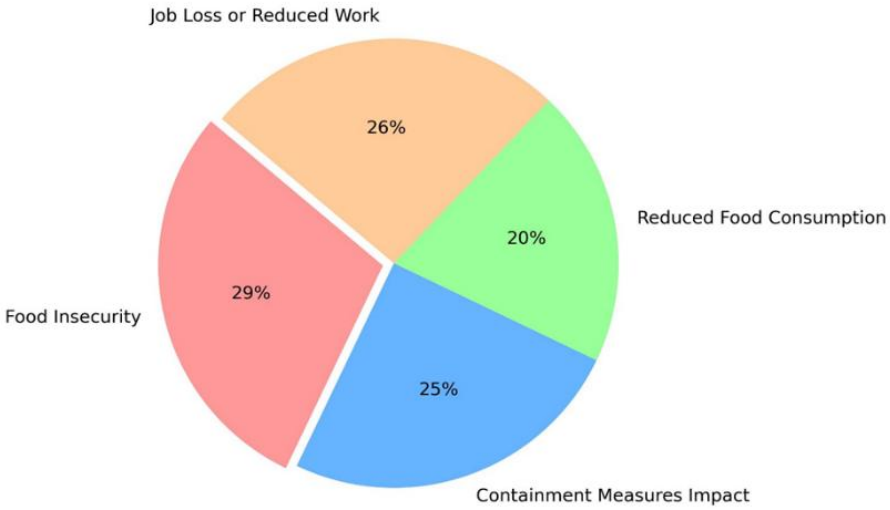

Fig. 4 Distribution of reported financial impacts of COVID-19 in Cox's Bazar.

Within the first three months following the onset of COVID-19, nearly 79% of respondents from the host community reported multiple adverse effects linked to containment measures. These included delayed agricultural harvests, challenges in marketing farm produce, disruptions to labor and inputs, increased costs, and reductions in remittance inflows and non-farm business revenues. Additionally, 63% of rural households indicated reduced food consumption, alongside reliance on government food support and private sector cash assistance. Livelihood impacts were heterogenous, varying with the geographic concentration of COVID-19 cases. Fig. 4 shows distribution of reported financial impacts of COVID-19 among host and FDMN communities in Cox's Bazar, Bangladesh, including income loss, employment disruption, and food insecurity. A day laborer's wife, Kohinnoor, expressed the precarious nature of her family's economic situation: "We have lost everything and have not gotten any work to earn money. Now it's very hard for us to come back to normal without outside support, but who will provide support, bearing in mind the risk?" Data from both Bangladeshi and Rohingya respondents revealed that prior to COVID-19, 10.3% engaged in paid work, with boys four times more likely than girls to work (17% vs. 4%). However, 85% of these workers experienced job loss or reduced work, with 57% of Bangladeshis and 75% of Rohingya not having resumed employment. Only 2%—predominantly males—secured new work during the pandemic period. The impact on the fisheries sector, a key economic activity in Cox's Bazar, was profound. Approximately 98% of artisanal fishers reported decreased consumer demand, falling fish prices, and transportation disruptions due to lockdown restrictions. Fishing expeditions declined in frequency and duration, leading to significant income losses. Despite the sector's importance—employing over 1.5 million small-scale fishers directly and supporting more than 10 million coastal fishers indirectly—support from government or non-governmental organizations was minimal. The fisheries supply chain also suffered from closures of restaurants, hotels, tourist venues, and educational institution canteens, further reducing market demand.

One small business owner reflected on these hardships: "I had a small food shop and had to close it due to lack of customers. It was my dream shop, but all plans were spoiled due to COVID." Qualitative responses from refugee adolescents echoed concerns about income loss. An 18-year-old boy remarked, "We could earn money then. Now we can't. My

elder brother used to work [at MSF] now he can't. Depression comes as we can't earn money now." Similarly, a 15-year-old girl noted the compounded difficulties during Ramadan due to halted transport and restricted work opportunities. Khalil Ahmed, a handicraft business owner, shared, "I had a small shop for handicrafts but have closed it due to getting lost for a long time, and till now have not found any alternative solution." Cox's Bazar, known as Bangladesh's tourism capital, relies heavily on this sector economically. The peak tourism season—from November to June—was severely disrupted by the pandemic. Approximately 57% of host community respondents reported direct or indirect negative effects from the lockdown on their livelihoods. February to March, typically the busiest months for beach tourism and visits to Saint Martin Island, saw significant downturns. The tourism and hotel sectors faced unprecedented losses, with closures of hotels and tourist attractions leaving operators and workers vulnerable. A community leader articulated the ongoing struggle: "You know we live on business relevant to tourism, so we have continuously faced loss, and till now we have not been able to recover; we feel the loan burden on our heads (Polas, 2018)."

The financial impacts observed in Cox's Bazar reflect broader global trends documented in low-income and refugee-hosting regions during the COVID-19 pandemic. Similar economic disruptions were reported among displaced communities in Kenya, Lebanon, and South Asia, where lockdown measures severely affected informal labor markets, food systems, and small-scale businesses. In Cox's Bazar, the economic consequences were particularly severe because both host and FDMN communities were already living within fragile livelihood systems prior to the pandemic. Nevertheless, the nature of financial vulnerability differed between the two groups. Refugee populations were primarily dependent on humanitarian assistance and informal camp-based activities, making them highly vulnerable to reductions in aid distribution and mobility restrictions. Conversely, host communities were more directly affected by the collapse of tourism, fisheries, transportation, and local businesses, resulting in widespread unemployment and debt accumulation. These contrasting experiences demonstrate how pandemic-related economic shocks interact differently with pre-existing livelihood structures and social positions. The findings also indicate that food insecurity was not merely a temporary outcome of lockdown measures but rather a manifestation of deeper structural inequalities within coastal and humanitarian economies. From a policy perspective, the study underscores the urgent need for diversified livelihood programs, emergency cash-transfer initiatives, and inclusive social protection mechanisms capable of supporting both refugee and host populations during future crises. In addition, strengthening local economic resilience through sustainable tourism recovery, fisheries support programs, and small-enterprise financing could reduce long-term dependency and vulnerability in Cox's Bazar.

Table 1. Summary of key impacts of COVID-19 on host and FDMN communities in Cox's Bazar, Bangladesh

Impact Dimension	Key Findings	Host Community	FDMN Community
Physical health	Common symptoms included fever, dry cough, fatigue, sore throat, and loss of smell/taste.	High prevalence of symptoms; many reported mild to moderate illness; limited testing access.	Similar symptom profile; higher vulnerability due to overcrowding and limited healthcare access.
Psychological health	Increased anxiety, stress, loneliness, fear of infection, and uncertainty about the future.	Higher reports of loneliness and social isolation due to mobility restrictions and livelihood loss.	High psychological distress linked to uncertainty, dependency on aid, and camp restrictions.
Financial impact	Job loss, income reduction, food insecurity, and disruption of tourism, fisheries, and informal work.	Severe impact on tourism, fisheries, transport, and small businesses.	Heavy dependence on aid; reduced informal income opportunities and increased food insecurity.

The study further contributes to broader debates on social sustainability and eco-welfare by illustrating how environmental vulnerability, humanitarian displacement, and public health emergencies collectively intensify economic inequality and livelihood insecurity in marginalized communities (Zhang et al., 2024). Overall, the financial impacts of COVID-19 in Cox's Bazar have underscored the fragility of livelihoods among both refugee and host communities, highlighting the urgent need for targeted economic support and recovery strategies. Table 1 summarizes the key findings on the multidimensional impacts of COVID-19 among host and FDMN communities in Cox's Bazar.

3.4 Recommendations

Based on the study's findings, several recommendations are proposed to improve maternal health understanding and care as follows. Strengthen mental health services to address pandemic-related psychological distress. Expand food security and social protection programs for vulnerable populations. Support economic recovery through targeted livelihood and employment initiatives. Improve healthcare infrastructure and ensure protection for frontline workers. Promote educational continuity using remote and community-based learning methods. Enhance coordination between government, NGOs, and community leaders for effective response.

4. Conclusions

The COVID-19 pandemic has had profound physical, psychological, and economic impacts on both the host and FDMN communities in Cox's Bazar. The partial lockdown, while necessary for controlling transmission, contributed to heightened community spread, disruption of essential services, and intensified socio-economic vulnerabilities. Limited healthcare infrastructure, centralized testing facilities, and inadequate hospital preparedness further exacerbated public fear, anxiety, and mental stress. Educational institution closures and the downturn of the tourism sector added to the growing psychosocial and financial burden, particularly among youth and low-income households. Overall, the findings clearly demonstrate that both host and FDMN communities experienced interconnected and multidimensional vulnerabilities, though the intensity and nature of impacts varied across groups. The study highlights that public health crises in fragile and humanitarian settings cannot be addressed through health interventions alone, but require integrated socio-economic and psychological support systems. To mitigate the adverse effects of the pandemic, the government must adopt an inclusive, multi-sectoral approach that ensures adequate healthcare access, mental health support, economic relief, and risk communication strategies. Strengthening healthcare governance, increasing COVID-19 testing, and ensuring continuous support for vulnerable populations are crucial. Furthermore, effective planning for concurrent crises—such as natural disasters—is essential in a climate-vulnerable region like Cox's Bazar. This study contributes a relatively rare comparative perspective by jointly examining host and FDMN communities within a single geographic setting, addressing a critical gap in existing COVID-19 impact literature. It also reinforces global evidence that pandemics disproportionately affect marginalized and displaced populations, further deepening existing inequalities. Future policy frameworks should prioritize long-term resilience building through strengthened primary healthcare systems, sustainable livelihood support, community-based mental health services, and disaster preparedness integration. Strengthening coordination among government agencies, humanitarian actors, and local communities will be essential for improving response efficiency in future public health emergencies. A collaborative and sustainable policy framework is therefore vital for building a more equitable and resilient post-COVID society in Bangladesh.

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During the preparation of this work, the authors used Grammarly to help improve the grammar, clarity, and academic tone of the manuscript. After using this tool, the authors reviewed and edited the content as needed and takes full responsibility for the content of the publication.

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