RESEARCH BRIEF

April 2024

Climate Change Induced Mental Health Problems in the Coastal Region of Bangladesh

"I used to cultivate rice and vegetables. But day by day, salinity increased, and soon, I could not produce anything. I started cultivating shrimp instead, but the cyclone and storm surge washed away my land. I lost everything again. This keeps me anxious all the time. Though I started cultivating shrimps again, this anxiousness returned whenever I heard any early warning."-Bishnupod (Alias)

INTRODUCTION

Bangladesh, ranked 7th most climate-vulnerable globally, faces escalating climate change impacts due to its geographical and socio-economic vulnerabilities. With increasing frequency of cyclones, storm surges, floods, salinity intrusion, and heat waves, the nation grapples with a dual crisis: physical and mental health. Natural disasters not only threaten lives and infrastructure but also leave lasting psychological scars, fostering anxiety, depression, and Post Traumatic Stress Disorder (PTSD) among affected communities. The Intergovernmental Panel on Climate Change (IPCC) recognizes the significant health risks posed by climate change, urging attention to mental health consequences, particularly among vulnerable populations like those in Bangladesh.

Studies reveal alarming rates of depression and anxiety post-disaster, with women and children disproportionately affected. Furthermore, the compounding effects of climate-induced stressors exacerbate existing gender-based violence and mental health issues. The magnitude of these challenges necessitates urgent action, yet only a few countries have integrated mental health support into climate change plans.

Research underscores a critical link between climate-related stressors and mental health burdens in Bangladesh, with disasters like Cyclone Sidr and Cyclone Mora leaving enduring psychological impacts. Women, often bearing the brunt of water insecurity and societal tensions post-disaster, face heightened risks of depression and violence. Moreover, inadequate healthcare infrastructure exacerbates mental health challenges, demanding policy interventions to bridge gaps in addressing climate-induced mental health risks.

Despite strides in national planning, Bangladesh's healthcare system grapples with myriad issues, hindering effective response to climate-induced mental health crises. Moreover, while the nation's climate vulnerabilities are well-documented, the mental health impacts remain underexplored. This study aims to fill this gap, focusing on Munshiganj Union (Shyamnagar Upazila, Satkhira District) in the coastal region. By investigating mental health challenges, identifying coping strategies, and assessing policy gaps, this research aims to inform targeted interventions to safeguard the mental well-being of coastal communities amidst climate change.

UNDERSTANDING THE CONTEXT

Global Climate Change Risk: The Intergovernmental Panel on Climate Change (IPCC) reports escalating trends in temperature and precipitation worldwide, primarily driven by human activities. Severe weather events, including heatwaves, heavy precipitation, droughts, and tropical cyclones, are intensifying due to climate change. These events pose direct and indirect health risks, amplifying mortality rates, non-communicable diseases, and the spread of infectious diseases. Vulnerable populations, such as the elderly and those with preexisting health conditions, face heightened susceptibility to heat-related illnesses. Disruptions to food and water supplies exacerbate malnutrition and waterborne diseases, aggravating health inequalities. The adverse impacts of climate change extend beyond physical health, impacting mental well-being through increased anxiety, depression, and PTSD.

Global Climate Change Induced Mental Health Risk: Climate change poses diverse mental health challenges, from minor stress to clinical disorders, with bushfires, hurricanes, and other calamities linked to stress-related psychological problems. Economic and food insecurity, involuntary migration, and heightened conflict exacerbate mental health issues. Temperature stress, drought, flooding, and cyclones contribute to mood disorders, aggression, and suicidal ideation. Vulnerable populations, including children and persons with disabilities, face heightened risks, emphasizing the need for holistic interventions to address climate-induced mental health risks.

National Climate Change Induced Mental Health Risk: Bangladesh faces extreme vulnerability to climate change, with cyclones, floods, and rising sea levels posing significant health risks. Psychological trauma, anxiety, and PTSD are prevalent among affected communities, underscoring the urgent need for mental health support. Climate-induced heat stress exacerbates health disparities, impacting vulnerable populations disproportionately. Remedial measures such as ecotherapy, cross-sectoral collaboration, and digital mental health services are recommended to mitigate mental health sufferings amidst climate change.

Summary of Policy Gap: Under this research, several policies and legislative documents were reviewed **to** understand whether these documents have addressed climate change induced mental health risk and remedial measures. The summary of policy gaps are as follows-

- Despite some acknowledgment {(8TH Five Year Plan, National Adaptation Plan (NAP)}, many policies lack explicit consideration of climate change-induced mental health issues.
- Disaster management policies prioritize physical health, neglecting mental health support during and after disasters.
- Health-focused documents fail to integrate climate change impacts on mental health and lack specific remedial measures.
- Sectoral policies, like the Coastal Zone Policy, overlook mental health impacts of climate change, focusing primarily on physical health and ecosystem conservation

RESEARCH METHODOLOGY

This research employed a mixed-design approach, integrating quantitative and qualitative methods from July to December 2023. This allowed for a comprehensive understanding of the complex relationship between climate change and mental health. The summary of the research methodology is given below-

Preparatory Research Activities

- **Literature Review**: Extensive review of literature informed the research design.
- **Inception Report**: A detailed report outlining objectives, methodology, and work plan was prepared and shared for feedback.
- **Policy Review and Gap Analysis**: National policies and legislative documents were analyzed to identify gaps related to climate change and mental health.

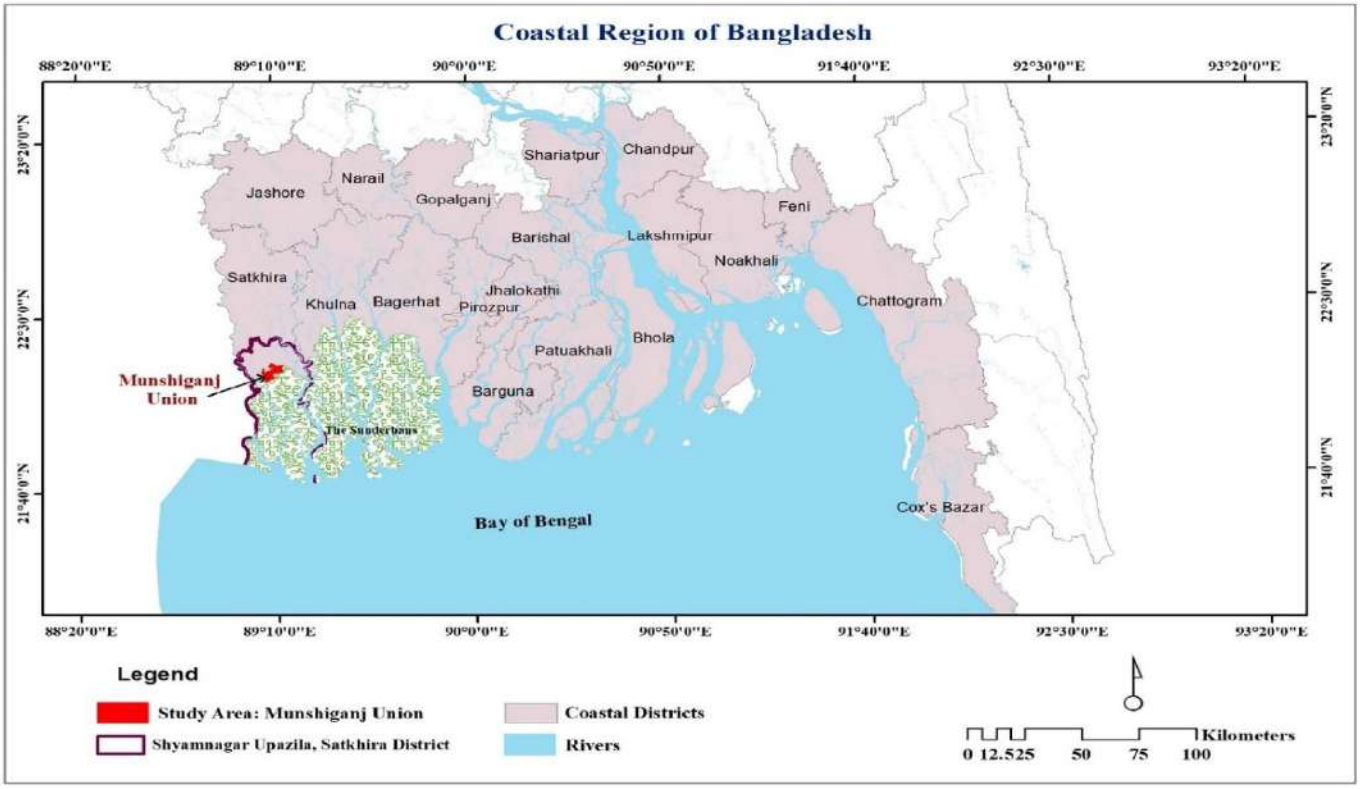
Data Collection Tools and Approach

- **Population Survey**: A cross-sectional population survey was conducted in Munshiganj Union using semi-structured questionnaires covering various aspects of climate change impacts and mental health. The total sample size of the population survey was 650. The survey population was selected through a convenient sampling method to ensure the participation of all the target groups of the study location. In order to measure the common mental health conditions such as depression, anxiety, stress, sleep quality, and post-traumatic stress disorder (PTSD), the PHQ-9 (Patient Health Questionnaire), GAD-7 (Generalized Anxiety Disorder), Perceived Stress Scale (PSS), Pittsburgh Sleep Quality Index (PSQI), and PTSD Checklist for DSM-5 (PCL-5) scales were used respectively.
- **Focus Group Discussions (FGD)**: Discussions were held with different groups to gather insights on climate change impacts, mental health challenges, and coping strategies.
- **Key Informant Interviews (KII)**: Interviews were conducted with stakeholders to obtain first-hand information on mental health challenges and coping mechanisms.

- **In-Depth Interviews (IDI)**: Case studies were collected through interviews with vulnerable groups affected by climate change-induced disasters.

Analysis, Reporting, and Dissemination

- **Data Analysis and Interpretation**: Quantitative and qualitative data were analyzed, and findings were presented in a format accessible to policymakers and stakeholders.
- **Preparation of Draft Final Report**: A comprehensive report detailing research findings, challenges, and recommendations was prepared and shared for review.
- **Dissemination of Study Results**: Findings were presented in a dissemination workshop to gather feedback and enrich the final report.
- **Preparation and Submission of Final Report**: The final report, incorporating stakeholder feedback, was submitted as the culmination of the research project.



The study area selected for this assessment was Munshiganj Union of Shyamnagar, a sub-district located in the Satkhira district of Bangladesh.

The area is highly vulnerable to climate change due to its low-lying geography, making it highly susceptible to natural hazards like cyclones, coastal flooding, sea-level rise, and coastal erosion, etc.

The area was severely affected by cyclone Sidr (2007), cyclone Aila (2009), cyclone Bulbul (2019), cyclone Amphan (2020), and cyclone Yaas (2021).

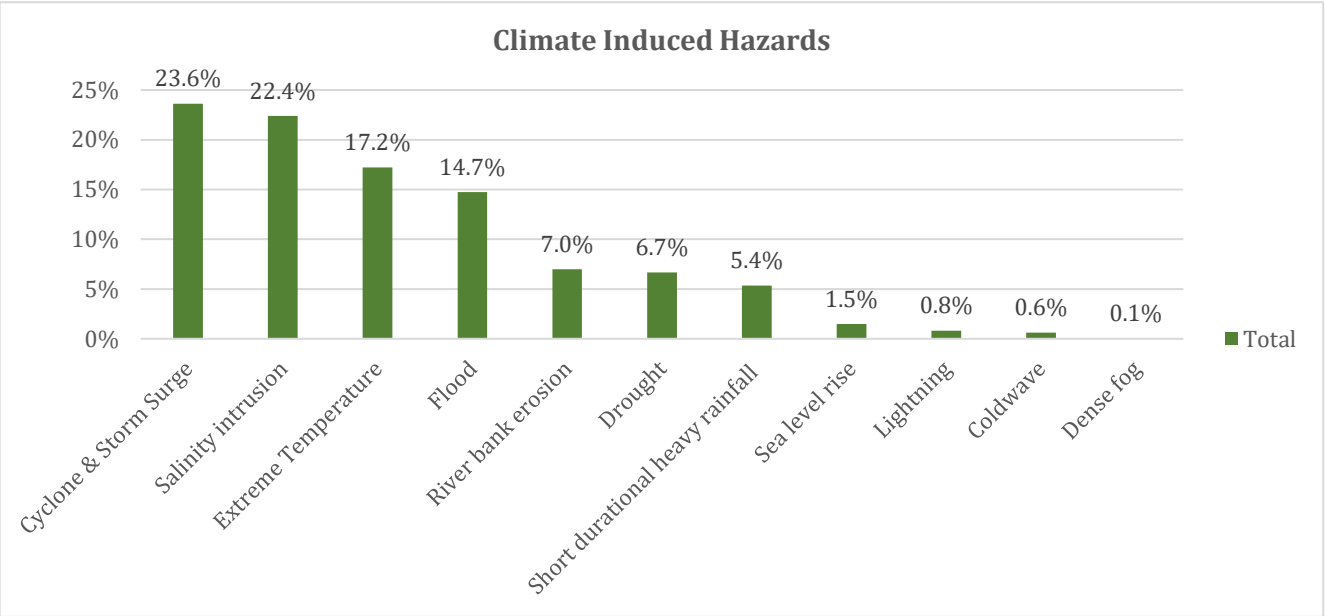
RESULTS AND FINDINGS

Demographic Profile

Gender Distribution: The survey reveals a gender distribution of 56.2% male and 43.8% female respondents, with a particular focus on understanding women's perspectives.

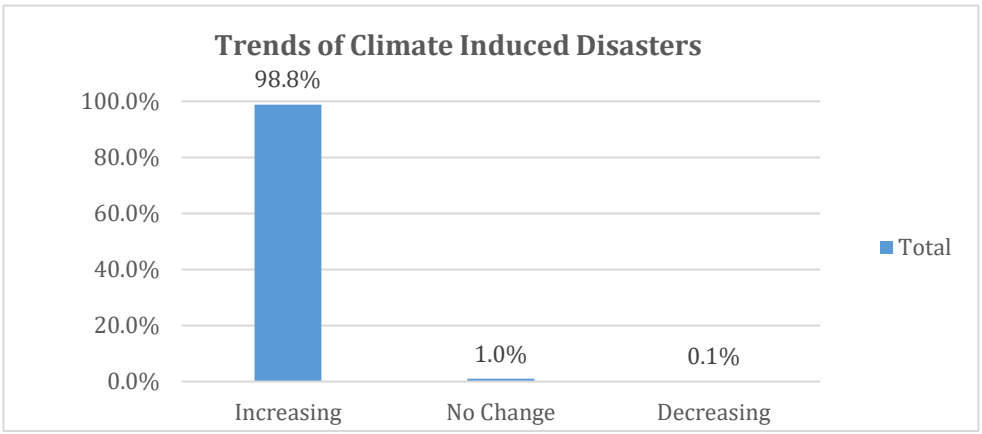
Age Groups: The majority (85.3%) fall within the adult bracket (25-64 years), with 8.5% comprising youth (15-24 years), and 6.2% older adults (>65 years).

Major Climate Change Induced Hazards



The Munshiganj area has a long history of enduring various climate-induced hazards. 23.6% of respondents identified cyclones and storm surges as the most prevalent climate-induced hazard. Additionally, 22.4% of participants highlighted salinity intrusion, while 17.2% and 14.7% pointed to extreme temperature and flood respectively.

Trends of Climate Induced Disasters



The study area is facing with climate risks for an extended period. Approximately 98.8% expressing the belief that climate-induced disasters are on the rise. Notably, only a minimal 1% of respondents perceive no change in the trend. community's perception of an escalating climatic disasters trend.

Challenges in Accessing Healthcare

Infrastructure: There is a shortage of healthcare facilities and skilled professionals.

Specialized Care: Gender-sensitive healthcare services are lacking.

Psychosocial Support: Resources for mental health issues are limited.

Medication and Equipment: Shortages and diagnostic constraints are prevalent.

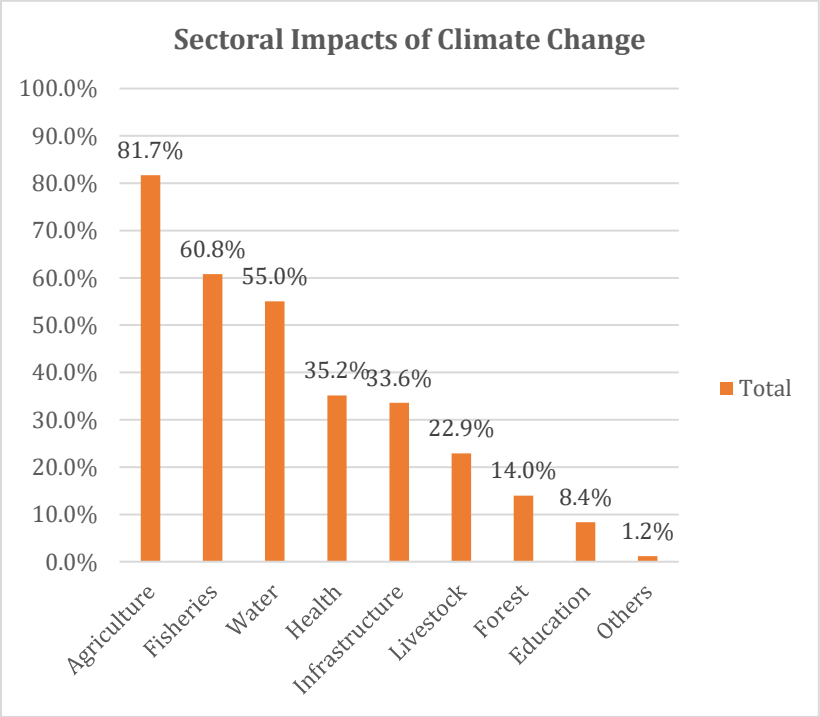
Affordability: Private healthcare services are often inaccessible due to cost.

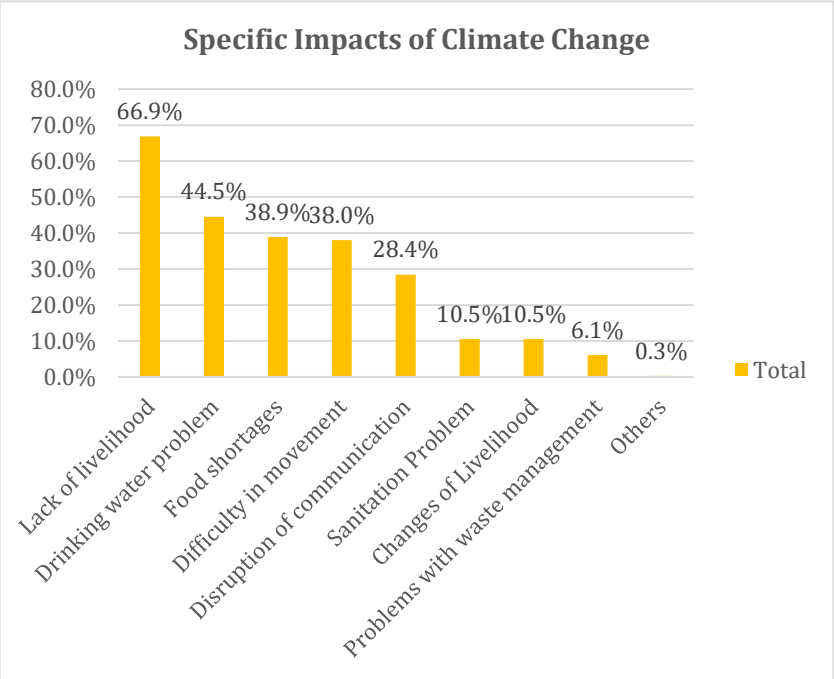
Transportation: Poor road infrastructure and limited ambulance services hinder access.

Accessibility: Persons with disabilities face challenges in healthcare facilities.

Sectoral and Specific Impacts of Climate Change and its Associated Disasters

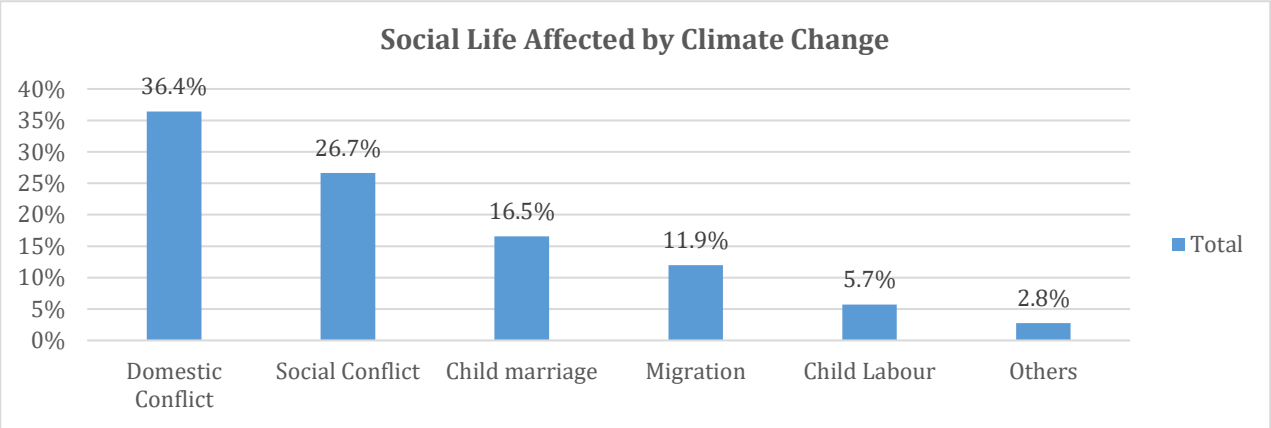
A staggering 81.7% of the climate change impact is felt in the agriculture sector, emphasizing the vulnerability of this vital industry, pivotal for numerous livelihoods. Following closely, the fisheries sector bears the brunt, with 60.8% of its operations affected, signifying the challenges faced by coastal communities deeply entrenched in fishing activities. Moreover, water resources experience significant ramifications, with 55% affected, potentially jeopardizing the region's water security. Livestock, integral to the local economy, suffers a notable impact of 22.9%, while the forests, crucial for ecological balance, are affected at a rate of 14%.





This figure shedding light on the multifaceted challenges faced by the community in the study area. A staggering 66.9% of individuals in the studied area reported lack of livelihood as a consequence of climate change. Additionally, 44.5% people face repercussions on drinking water crisis. The survey further identifies issues such as food storage, difficulty in movement, and communication problems. Notably, 10.5% of respondents cite negative impacts on sanitation and encounter challenges in livelihood transition, with 6.1% facing waste management problems.

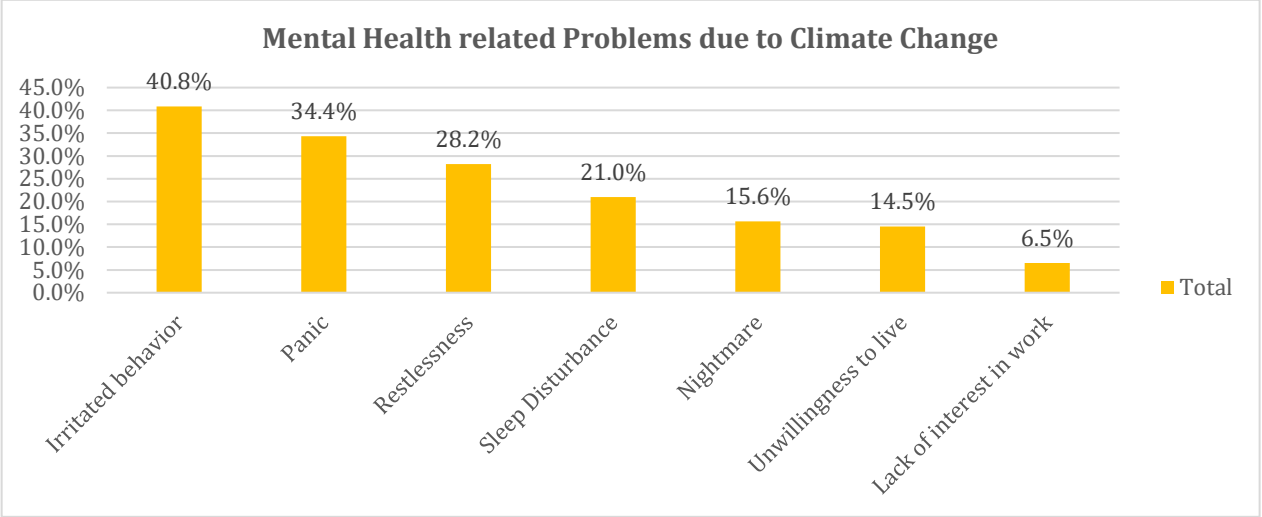
Climate Change Induced Disaster Impacts on Social Life



Domestic conflicts have emerged for 36.4% of the population, while 26.7% contend with social conflicts directly or indirectly linked to climate change. In the study location, 16.5% of child marriages are associated with climate threats, posing significant physical and mental risks to children and imposing social burdens on families. Additionally, cases of migration (about 11.9%) and child labor (approximately 5.7%) are prevalent in the area, emerging as outcomes of climatic risks.

"Me and my husband were struggling to feed our three children when Aila occurred, and we lost our livelihoods. We married our daughter when she was only 14 years old. We were helpless. My daughter became a mother at 17. I worry about her every day. I stay depressed thinking about what her life would be like if we could let her pursue education instead of marrying her off."- Alea (Alias)

Climate Change and its Associated Disaster Impacts on Mental Health



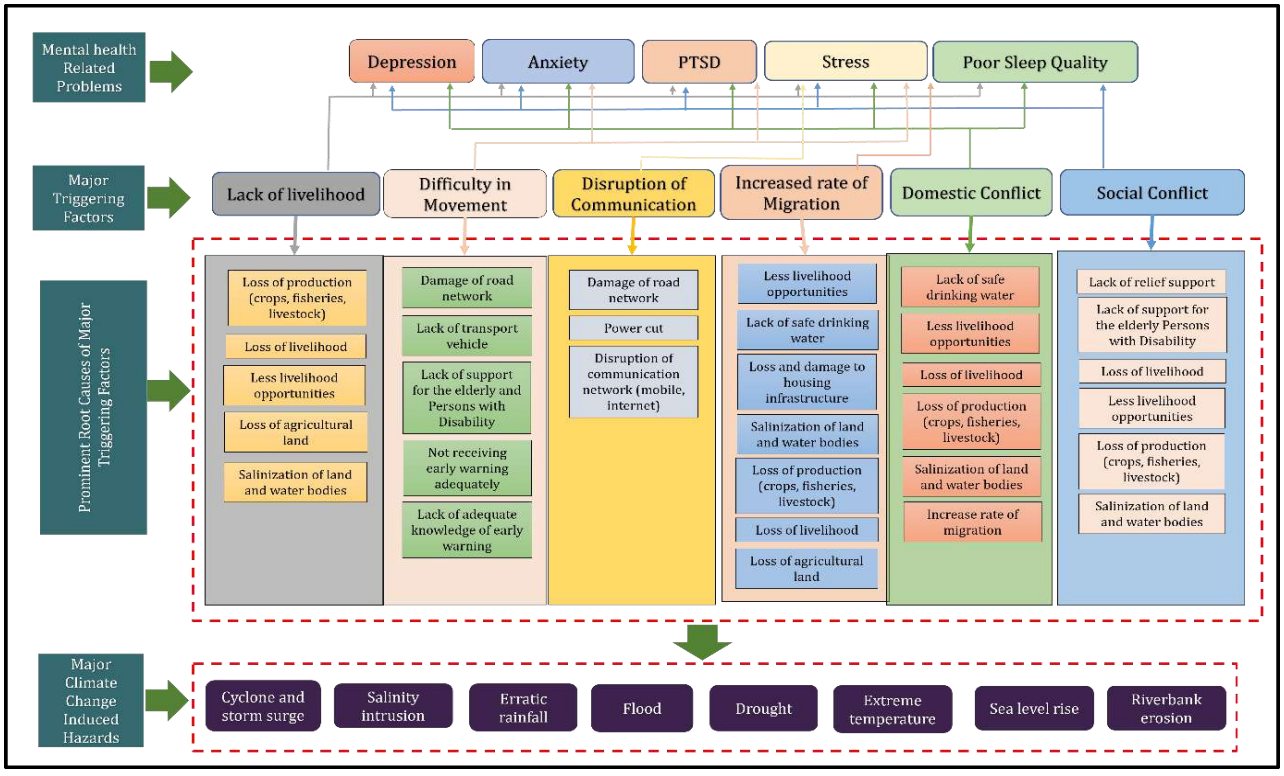
The aforementioned figure illustrates the profound impact, with approximately 40.8% exhibit irritated behavior, and 34.4% feel panicked, reflecting the broader mental health conflicts induced by the rising climate crisis. Furthermore, 15.6% of individuals experience nightmares, while 14.5% and 6.5%, respectively, lose the willingness to live or interest in work, respectively.

Prevalence of Mental Health Problems among Study Population

The population survey findings reveal a substantial prevalence of mental health disorders among the surveyed population, including moderate to extremely severe anxiety (25.07%), depression (22.48%), stress (49.42%), PTSD (20.03%), and poor sleep quality (43.95%).

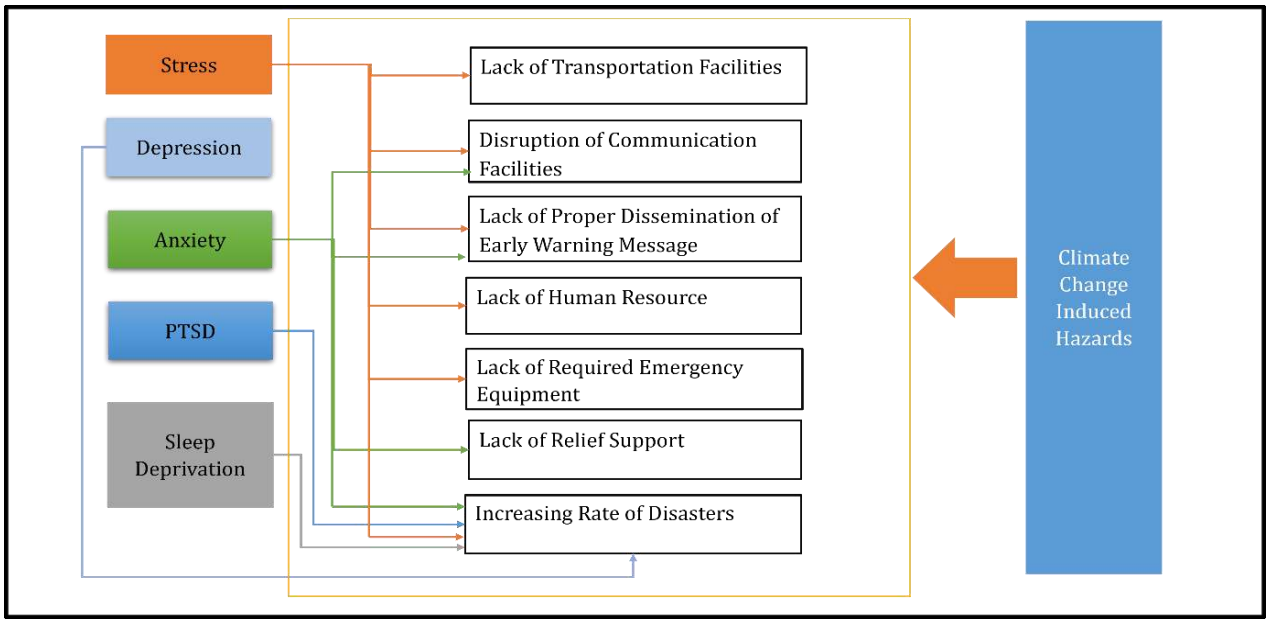
Synthesis of Major Triggering Factors Affecting Mental Health in Coastal Communities

Major contributing factors identified include livelihood constraints, mobility challenges, community disruptions, heightened migration rates, domestic and social conflicts. These results underscore the pressing need for tailored interventions and support mechanisms to effectively address these mental health burdens. The following figure illustrates the interrelationship between climate change induced disasters and their associated impacts and mental health problems that are being faced by the study population.



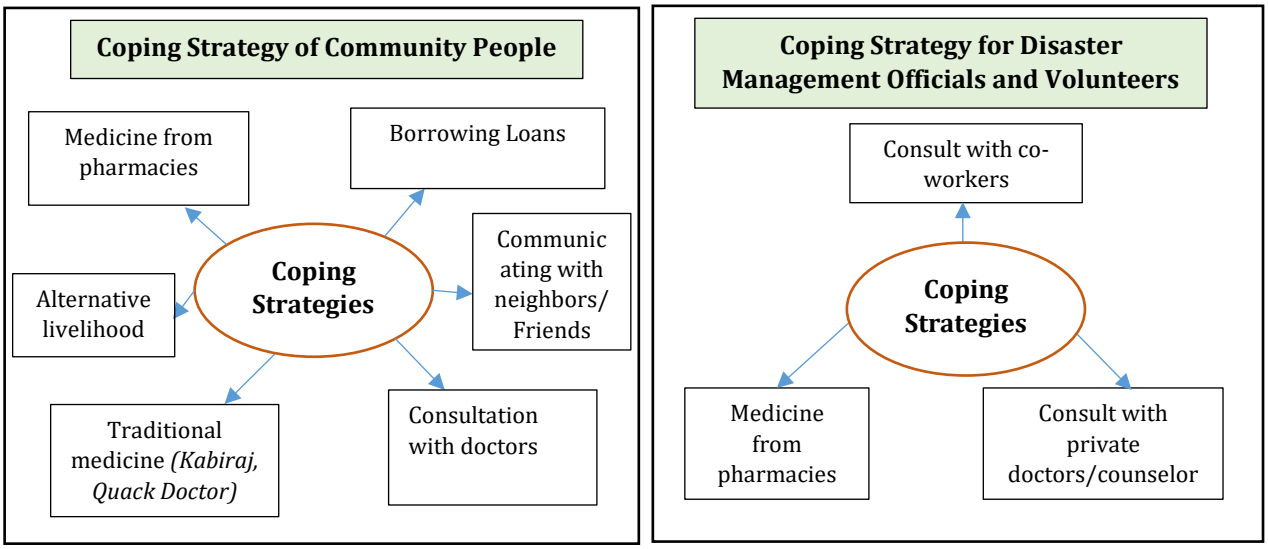
Mental Health Related Problems Faced by Disaster Management Officials and Volunteer

Local volunteer workers and posted disaster management officials who respond to disasters are at a high risk of experiencing different mental health problems, alongside the disaster victims. From the KIIs and FGDs, it is observed that their service involves working with highly stressed populations in critical situations, with limited resources and long periods away from home. These critical conditions pre, during and after disaster period often make them suffer from stress, anxiety, PTSD, and sleep disturbances. The major triggering factors that affect their mental health are as follows-



Existing Coping Strategies to Reduce the Mental Health Related Problems

To address the repercussions of climate related health challenges, the community people employ various coping strategies such as problem-solving and emotional adaptation to navigate the aftermath of climate-related health challenges. Besides, the local volunteers and disaster management officials also employ various coping strategies to maintain psychological resilience before, during, and after disasters. The major coping strategies identified from FGDs and KIIs are shown in the following figure.



POLICY RECOMMENDATIONS

Revision and Effective Implementation of Policy and Legislative Framework

Addressing mental health risks in the context of climate change requires comprehensive measures integrated into national policies. Key actions include:

- Enhancing mental health services provision: Allocate adequate budgets, establish surveillance mechanisms, counseling units, and bolster capacity building initiatives.
- Integration into National Adaptation Plan (NAP) and National Health Adaptation Plan (HNAP): Adaptation strategies need to consider mental health impacts, focusing on vulnerable groups.
- Updates to policy and legislative frameworks: Enhance healthcare facilities and provisions for mental health service providers.
- Collaboration for effective implementation: Foster coordination among stakeholders for a cohesive approach.

Conduct Research on Climate Change Mental Health Risk

Understanding the relationship between climate change and mental health necessitates focused research:

- Longitudinal studies: Investigate the evolving relationship in climate-vulnerable areas.
- Syndromic surveillance: Monitor mental health-related symptoms in vulnerable communities.
- Tailored interventions: Identify specific mental health risks and appropriate interventions for vulnerable groups.
- Innovative financial models: Explore models to reduce mental health suffering.
- Alignment with National Adaptation Plan (NAP): Align research with climate stress areas for a comprehensive understanding.

Ensuring Health Services and Facilities, including Mental Health

Access to quality healthcare, including mental health services, is crucial:

- Continuous presence of medical staff: Ensure round-the-clock availability in health infrastructures.
- Inclusive health infrastructure: Establish functional and accessible facilities equipped to serve vulnerable populations.
- Deployment of specialized professionals: Ensure the availability of mental health professionals in vulnerable areas.
- Affordable counseling units: Establish units within healthcare infrastructures.
- Digital mental health services: Implement digital services for remote populations.

Providing Capacity Building Training and Awareness Raising Sessions

Capacity building and awareness are vital for addressing mental health risks:

- Comprehensive training for healthcare providers: Equip them to address both physical and mental health issues.
- Collaboration for disaster preparedness: Develop and implement plans prioritizing mental health concerns.
- Mental health education: Integrate into the primary school curriculum.
- Targeted awareness sessions: Organize sessions for vulnerable communities, disaster management officials, and volunteers.

Reducing Climate Change Vulnerability

Enhancing resilience in vulnerable populations is essential:

- Introduction of alternative livelihood options: Provide training programs focusing on alternate livelihoods.
- Strengthening early warning systems: Ensure effective dissemination in rural areas and among vulnerable populations.
- Equitable relief support: Distribute relief support with equity and inclusion in mind.
- Access to safe water options: Provide inclusive, safe water options at the household and community level.

Disclaimer: *The data and information are taken from the study titled '' Climate Change Induced Mental Health Problems in the Coastal Region of Bangladesh'' conducted by Centre for Climate Change and Environmental Research (C3ER), BRAC University, funded by Bangladesh Health Watch (BHW).*