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The Effects of Flood on Mental Health among the People of Nikli Haor, Bangladesh

Mohammad Naeem Hosain ^{1*}, Mahfuj Sarder ², Md. Golam Mostafa ³, Sayed Ariful Haque Hridoy ⁴, Md. Shohad Hossain ⁵, Champa Akter ⁶, Mst. Lenat Tabassum⁷

- 1, 2 Department of Anthropology, Faculty of Social Science, Jatiya Kabi Kazi Nazrul Islam University, Bangladesh
- ^{3, 4, 5} Department of Public Administration and Governance Studies, Faculty of Social Science, Jatiya Kabi Kazi Nazrul Islam University, Bangladesh
- ⁶ Department of English (ELT), Faculty of Arts, Jahangirnagar University, Bangladesh
- ⁷ Department of Journalism, Communication and Media Studies, Faculty of Social Science Varendra University, Bangladesh
- * Corresponding Author: Mohammad Naeem Hosain

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Abstract

Frequent severe floods are becoming a widespread vexation to communities due to shifts in climate. The aim of the study is to explore how regunan floods in Nikli Haor Bangladesh affected the mental health of its residents. A blended methodology is used for a comprehensive study of the effects that floods have on mental health in Nikli Haor. The dossier on flood-affected persons' trauma and mental health will be constituted through the administration of surveys, individual interviews, and focus group discussions. Analysis of survey data will assist in determining the prevalence of mental health disorders among people affected by flooding. Information from insider perspectives will help illuminate experiential realities, besides personal strategies applied to deal with the undertaking. Readings from these findings indicate that repeat floods in Nikli Haor have deeply impacted the psychological well-being of many citizens who live in the area. Having to leave their homes, loss of livelihood sources, property damage and having to see everything they've worked for get ruined greatly contribute to feelings of emotional distress in Nikli Haor. Additionally, the inadequate resources for mental health lead to more difficult challenges facing this society. Design and implementasmall one about the wanted. Findings of this study will enhance comprehending of what mental health considerations should be incoporated into the practices and separate plans for mo more.

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1. Introduction

The northeastern Bangladeshi region of Nikli Haor is renowned for its stunning landscapes and tranquil streams. Underneath the serene exterior, however, is a community that is witness to the frequently disregarded effects of a frequent natural occurrence: floods. (Zhang *et al.*, 2022) [17] For the residents of Nikli Haor, the yearly monsoon flood not only causes physical ruin but also poses a silent, invisible threat that has a serious effect on their mental health. Like many other flood-prone areas worldwide, Nikli Haor has experienced more than simply seasonal flooding. They stand for an ongoing fight that goes beyond the apparent flooding of crops and houses. The people who live in this area are affected by this fight on a mental and emotional level. A neglected and underestimated aspect of these communities' resilience is the toll that floods take on their mental health. (Bhugra, 2004) [1].

The impact of flooding on the mental health of the residents of Nikli Haor is examined in detail here, along with how often these effects go unnoticed. Beyond the immediate destruction of houses and livelihoods, floods have a lasting impact on people's

minds and the social structure of communities. (Krause, 1987) [11] The pain, terror, and worry that accompany floodwaters often go unnoticed but leave permanent traces that may last for a very long time after the waters have subsided. On this journey, we make our way through the complex network of variables that contribute to the hidden consequences of floods on mental health. (Bhugra, 2004; Frank & McGuire, 2000) [1,7].

Objective

The overall goal of the study is to pinpoint the demographic subsets in Nikli Haor—children, the elderly, those with pre-existing mental health issues, etc.—that may be more susceptible to the negative impacts of floods on mental health.

There are some specific objectives:

To define the indicated mental strength issues that Nikli Haor locals experience often.

To investigate the factors that forge insane health questions in flood-impressed communities.

To raise knowledge of the insane health impacts of floods with policymakers, aid providers, and the general public.

To lower shame and discrimination against folk accompanying insane health questions later a flood.

Literature Reviews

John R. Freedy, Dean G. Kilpatrick and Heidi S. Resnick has published an article (1993) [8] under the title "Natural Disaster and Mental Health: Theory, Assessment and Intervention" The purpose of this paper is to develop a complex risk factor model for predicting mental health adjustment after a natural disaster exposure. The model was created using the authors' combined research and clinical expertise. The model is both comprehensive and compact, implying potential utility for research and clinical applications. In keeping with the issue's applied focus, we will highlight the model's clinical utility. This paper's presentation will be separated into three portions. To begin, we shall provide the multifactorial risk factor model.

Rui Zhang, Yunzhi Zhang and Zhe Dai have investigated on their article "Impact of Natural Disasters on Mental Health: A Cross-Sectional Study Based on the 2014 China Family Panel Survey" (2022) [17]. They look study the connection between rural China's middle-aged and older adult population's mental health and natural disasters. They look into how natural disasters impact mental health using simple least squares and propensity score matching. Their findings indicate that older and middle-aged people's mental health are seriously harmed by natural catastrophes in rural China. This influence varies depending on an individual's educational background and level of agricultural productivity. It is shown in their article that natural disasters may have a negative impact on people's happiness and sense of fulfillment in life. Bonnie L. Green and Susan D. Solomon have discussed on their article "The Mental Health Impact of Natural and Technological Disasters" about the impact of disaster (i.e., do disasters have a negative impact on mental health?) as well as the kinds of symptoms that have been scientifically linked to these occurrences are discussed. They also provide a summary of the current knowledge regarding the long-term development of a disaster response mechanisms. They next go through stressor features, individual traits, and socialenvironmental characteristics as risk factors for the

emergence of psychological disorders. This section also discusses the elements that contribute to successful outcomes. Finally, conclusions gained from this research about prevention and intervention are emphasized.

Bob Carroll, Hazel Morbey, Ruth Balogh, Gonzalo Araoz, have published an article on 2009. They published their article under the title "Flooded homes, broken bonds, the meaning of home, psychological processes and their impact on psychological health in a disaster". They have discussed about Interviews were conducted with those whose homes had been flooded and those who had helped them. The results demonstrated that many of the victims experienced mental health problems in addition to significant disruptions to their lives and significant damage to their homes. The psychological processes (identification, attachment, alienation, and dialectics) that underpin the sense of home and its effects on psychological health are analyzed from both phenomenological and transactional perspectives. There are suggestions for procedures and policies.

Dr Neal Krause PhD, have published an article on 2010. The title was "Exploring the Impact of a Natural Disaster on the Health and Psychological Well-being of Older Adults". They have illustrated that the amount of time needed for symptoms to subside as well as the interval between the incidence of a stressor and the onset of symptoms must be carefully taken into account. We investigate how long it takes for symptoms to go away after a natural disaster (Hurricane Alicia) using a synthetic cohort approach. Results from a random community survey of senior citizens indicate that the storm's main impacts fade after roughly 16 months. In this adjustment process, significant gender differences were discovered. There is a discussion of how these findings affect stress research.

Theoretical Framework

A systematic and methodical style to tackle a research problem or question is what is known as a theoretical framework. It is a collection of related ideas that serve as the basis for the understanding of a certain subject or event. Theories that are related to this research is given below:

The effect of flooding on mental health is the subject of this study. The psychodynamic theory of Sigmund Freud is strongly related to this research.

Unresolved trauma and unconscious conflicts are the main causes of mental health problems, according to psychodynamic theory. This theory is founded on Sigmund Freud's theories, according to which the mind is made up of three parts: the id, ego, and superego. The id is the name for the volitional, rewarding part of the mind. The ego is the intermediary of the logical mind between the id and the superego. The superego is the moral part of the mind responsible for upholding societal norms.(Boorse, 1976)

Below is a synopsis of psychodynamic theory's key concepts and tenets:

The unconscious mind is regarded to be the primary repository of human thoughts, feelings, and motives. This idea is at the heart of psychodynamic theory. People unconsciously held memories, desires, and conflicts are kept in this unconscious domain. These unacknowledged facets of oneself can affect one's emotions and actions.

Sigmund Freud's this theory has closely connected to this research for investigating the impact of flood on the mental health of the people of Nikli Haor. (Prince *et al.*, 2007) [12]

Research Methodology

The methodical technique to designing, carrying out, and analyzing research is known as research methodology. It involves determining how to respond to a study topic. It includes picking the appropriate research techniques, gathering and interpreting data, and coming to conclusions. The type of data required, the research topic being answered, and the resources available will all influence the specific research approach chosen. There are several techniques of research such as Qualitative and Quantitative data analysis, Primary and Secondary data analysis, Focused Group Discussions (FGD), Key Informant Interviews (KII), Household Surveys, Questionnaires, Case studies, Samplings etc.

Selecting a group of those who have been impacted by flooding and then evaluating their mental health would constitute sampling in the context of research on the psychological impacts of flooding.

Two types of sampling method are used:

- 1. Simple random sampling
- 2. Stratified sampling

First person is selected by using Simple random sampling. Then stratified sampling method is used by mapping all areas that are affected by flood and referencing victims of the impact of flood on mental health. Overall sample size of the research is about 150.

Focused Group Discussion

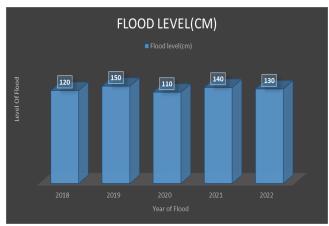
Focused Group Discussion (FGD) was Organized in Community level. I have randomly selected a tea stall where some people were gossiping. I have talked to them and selected 9 people who were about 27-48 years old. Both of them have been affected by floods. This group provides valuable insights into the psychological and emotional repercussions of experiencing floods. The FGD data have transcribed and subjected to thematic analysis.

Seasonal Flood Calendar

Flooding is a common occurrence in Bangladesh's Nikli Haor wetland habitat. The amount of rainfall and the intensity of any cyclones or other storms affect Nikli Haor's flood level, which changes from year to year. nThe following table displays Nikli Haor's flood level from 2018 to 2022.

Table 1: Flood Level Indicator

Year	Flood level (cm)
2018	120
2019	150
2020	110
2021	140
2022	130



Source: Own mapping

Fig 1: Seasonal Flood Calendar

As we can see, the flood level of Nikli Haor has fluctuated from year to year. However, the overall trend has been upward, accompanying the flood level increasing by 10 cm over the five-year period. This increase in flood level is likely due to a number of determinants, containing climate change, deforestation, and study of human population. Climate change is leading to more extreme weather events, to a degree intense precipitation and more cyclones. Deforestation is reducing the amount of vegetation that can consume water, that leads to increased inundation. And study of human population is dawdling more pressure onto land from water resources, that can lead to the development of floodplains. Community Mapping

Community mapping of Participatory Rural Appraisal (PRA) methods, is a valuable approach for assessing the psychological impact of floods among the people of Nikli Haor. For the research as a community instructor an Imam of a local Mosque was selected. He informed that many of the people feels depressed and especially the Youngers are more afraid than elder. Sometimes he has to play the role of healer for the mental health healing. The administration and the Non-political Institution don't support to defeat the impact of flood. All of the society appendages help each one to deal with the accident.

Description of the Study Area

This study is conducted at a local area of Nikli Upazila. I prefer this region because this area was flooded almost every year from small to large scall. The insane impact of flood is individual of the important issues concerning this district. Nikli Upazila is individual of the organizational domains in the Kishoreganj district of Bangladesh. It is located in the principal few the country and is famous for allure picturesque advantage and land countrysides.

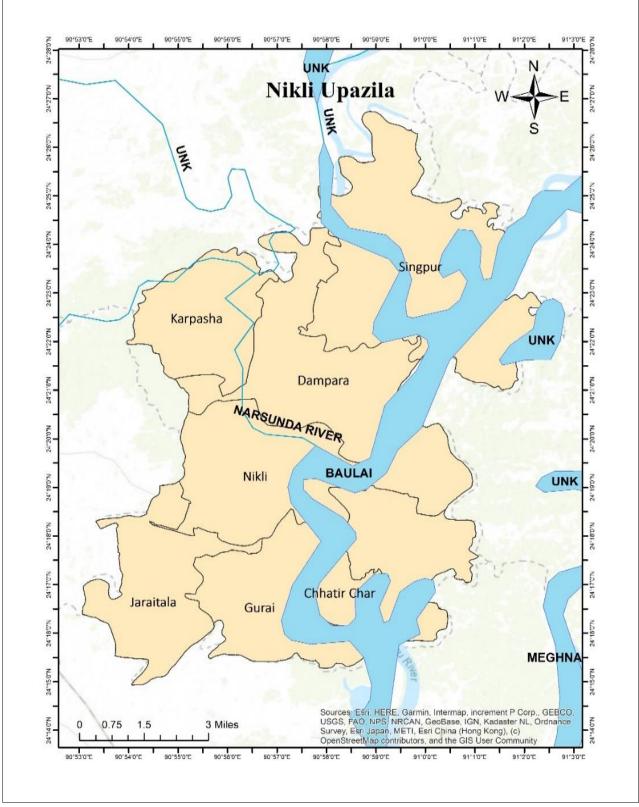


Source: Own Mapping (Software: ArcGIS)

Fig 2: Mapp of Nikli Upazila

Nikli Upazila, located in the Kishoreganj department of Bangladesh, has a record of struggling the destructive forces of nature, accompanying floods being a recurrent and devastating problem. This Upazila, like many others in

Bangladesh, is well susceptible to annual cyclone floods, that can wreak destruction on the lives and livelihoods of allure residents. Yearly Wetland of the Area



Source: Own Mapping (Software: ArcGIS)

Fig 3: Yearly Wetland

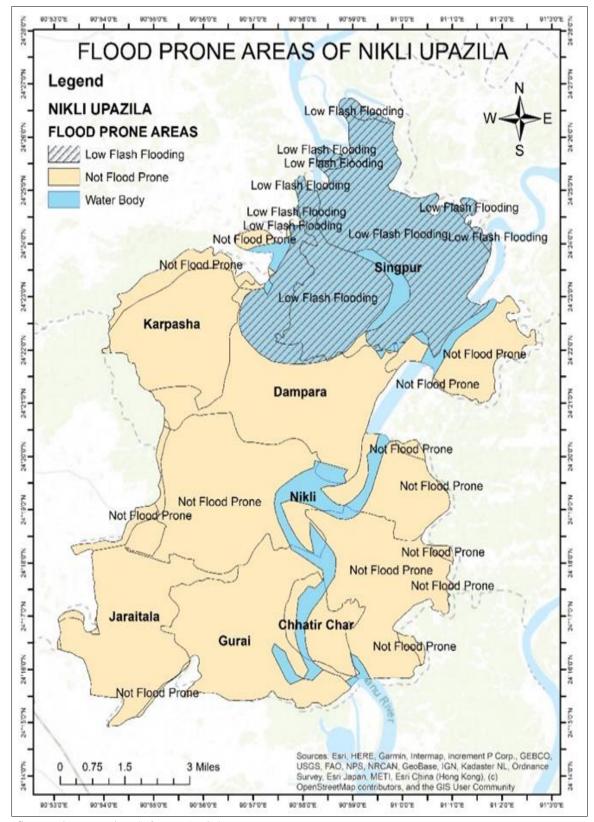
Yearly Wetland in Nikli Upazila plays a pivotal role in maintaining the ecological balance of the region. Wetlands, in general, serve as vital habitats for a diverse range of flora and fauna. These areas are often teeming with birdlife, insects, amphibians, and aquatic plants. Yearly Wetland is no exception, boasting a rich biodiversity. This map shows that the flood and wetland have a significant role to impact on

mental, social and economic aspects.

Flooded Area

Nikli Haor is situated in the Nikli Upazila of Kishoreganj district in the Mymensingh Division of Bangladesh. It is approximately 60 kilometers northeast of the capital city, Dhaka. Seasonal flooding occurs in the Haor basin and Nikli

Haor. The low-lying parts of Nikli Haor are regularly overflooded during the monsoons, when strong rains and the runoff from nearby mountains eventually reach the basin. It plays an important role in maintaining the balance and productivity of the ecosystem.



Source: Own Mapping (Software: ArcGIS)

Fig 4: Flooded Area Map

While the migratory floods are essential for farming, they further pose various challenges. Overdone or inappropriate inundation can bring about crop misfortune and damage to homes and foundation. The flooding can disrupt daily life and result in food and income insecurity for the local population.

Demographic Information

Age of Respondents

The age structure of respondents in a research study can vary significantly based on the study's objectives, target population, and sampling methods. Here are some common age categories that I have used in this study:

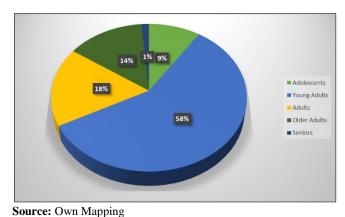


Fig 5: Age of the Respondents

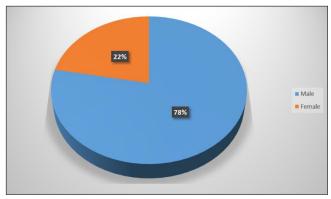
The specific age categories chosen will depend on the research objectives and the data analysis requirements. I have chosen to use fewer age categories or to group ages differently based on the nature of the study.

Gender of Respondents

Studies often demonstrate the importance of considering the gender of respondents when analyzing their responses and interpreting the results. Collecting and analyzing data on the gender of respondents can highlight significant differences and variations in the results and conclusions of research. For this research we have interviewed 150 respondents. The number of male respondents is 117 which is the major gender variation of this research and it is about 78% of total sample size. Remaining 33 persons are female which about 22% of total sample. Other gender wasn't involved in our study

Table 2: Gender of the Respondents

Gender	Number	Percentage
Male	117	78%
Female	33	22%
Others	0	0%
	Total-150	100%



Source: Own maping

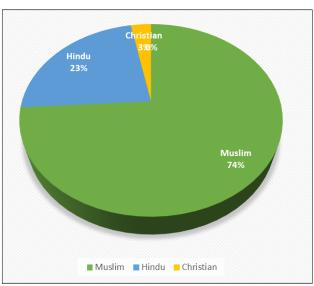
Fig 6: Gender of the respondant

Religion of Respondents

This study examines the number of person's religion. In our calculation the number of samples is 150. Most of them are Muslim. In our research 73% respondents are Muslims, 24% respondents are Hindu and 3% respondents are Christian. It is very important for measuring the psychological impact of flood to know the religion of respondents. Because the impact varies from religion to religion.

Table 3: Religion of the Respondents

Religion	Number	Percentage
Muslim	110	73%
Hindu	36	24%
Christian	4	3%
	Total=150	100%



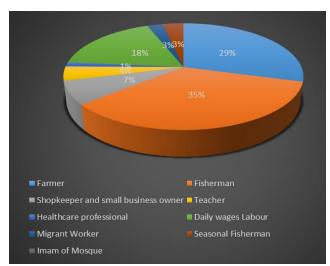
Source: Own mapping

Fig 7: Religion of respondents

It's crucial to remember that religion does not always have a favorable effect on people's mental health amid floods. Some people may experience emotions of inferiority or shame if they think that their religious beliefs should have protected them from hardship.

Occupation of Respondents

The business of the respondent plays a important role in understanding the impact of floods on the mental health of the people reside Nikli Haor, a region namely specifically vulnerable to flooding. It is essential to consider the differing professions inside the society, as they are likely to experience the effects of inundation differently, that can in proper sequence affect their mental well-being.



Source: Own mapping

Fig 8: Occupation of the respondent

Farmer

A solid portion of the state in Nikli Haor is engaged in agriculture, generally nurturing rice and other crops. For farmers, inundation has direct and severe consequences. Their livelihoods depend on the success of their crops, and when floods happen, they can division between offense and defensee their entire harvest. This leads to economic stress, uncertainty about the future, and, in many cases, depression or anxiety.

Fisher

Angling is another meaningful profession in the region. When inundation disrupts water bodies and floating ecosystems, netermen grant permission struggle to catch net and other floating resources. This can lead to fiscal imbalance, that in proper sequence affects their mental health.

Storekeeper and limited trade holder

Many things in Nikli Haor run narrow shops or businesses. All along inundation, they ability see a visit customers due to the displacement of the local community or conveyance issues. This leads to commercial strain and can result in increased stress and anxiety.

Teacher

Those involved in education, in the way that teachers and school administrators, more face challenges. Inundation can upset the academic calendar, making it troublesome for students to attend school regularly. Teachers concede possibility experience supplementary stress in difficult to make brave dreaming time and ensure that students' educational needs are met.

Healthcare professional

Healthcare professionals, containing doctors, nurses, and society health workers, are on the front lines all the while floods. They often need to work under challenging environments to provide medical convertiblee and emergency relief. The stress and confusion they witness in their patients can take a toll on their own mental health.

Daily earnings Labour

Many people in Nikli Haor rely on routine wage labor for their income. When floods upset work opportunities, they concede possibility struggle to make ends meet. This economic insecurity can lead to heightened stress, anxiety, and even desperation.

Immigrant worker

Some things from Nikli Haor work as emigrant laborers in other regions. When floods happen, they ability be unable to send money back to their families, producing emotional distress for two together the workers and their families back home.

Occasional Fisher

Floods are a recurring unaffected disaster in the region, often precipitating the waters to overflow and inundate the communities in Nikli Haor. This position can have a deep affect the mental health of the people, containing the seasonal castermen.

Imam of Mosque

The imam, as a otherworldly leader, plays a important role in providing solace and otherworldly guidance to the flood-affected populace. They offer conversation of springe and encouragement rooted in religious teachings, helping people find meaning and purpose all along troublesome times. Imams are not just religious leaders; they are too trusted members of the society. They often provide counseling services to things dealing accompanying the emotional aftermath of a flood. Their empathetic ear and guidance can help alleviate feelings of bounceelessness and provide an outlet for emotional expression.

Findings and Analysis

Floods are open disasters that can have devastating effects on communities and things. Beyond the immediate material dangers and property damage they cause, floods can likewise have a deep intellectual affect those affected. Between the many cognitive consequences, depression and anxiety are two prevalent and interrelated mental health issues that often arise in the aftermath of a flood.

Depression and anxiety often be similar or consistent in the aftermath of a flood. People accompanying depression experience heightened anxiety about the future, while those accompanying anxiety concede possibility become depressed due to the overwhelming nature of their worries. Various determinants can enhance the invention or irritation of insane energy questions in things touched by floods.

- 1. Frightening Occurrence
- 2. Dislocation and Itinerancy

- 3. Deficit of Individual Gear
- 4. Raised Risk meaningful Abuse

It's essential for things and societies touched by floods to endure enough support and possessions to address these insane energy challenges. This support can emanate insane strength specialists, society arrangings, and administration instrumentalities cooperation to support enjoining, money, and help all the while the improvement process. Early interference and support can help check the complete insane strength impact of a flood.

Mental health education programs in schools and workplaces help things understand the fundamentals of mental health, universal disorders, and the importance of seeking help. In our study we don't establish all for answering the problem in their society. People the one have experienced mental health challenges often share their stories but they don't get some help from the society.

Floods, especially in areas like Nikli Haor, often result in the deficit of homes, livelihoods, and even lives. The immediate strain and deficit are evident, but the emotional impact is equally deep. The determined fear of impending floods, the displacement, and the struggle for continuation take an immense toll on the mental health of the residents. The people of Nikli Haor are often stigmatized for use a flood-prone area. They face judgment and prejudice from outsiders the one perceive them as reckless for not relocating. This shame exacerbates their distress and anxiety. The shame about mental health issues is a all-encompassing problem, and it's no different in Nikli Haor. Those the one exhibit signs of shock or post-flood stress disorders are often stigmatized inside their own communities, upsetting them from seeking help. After floods, many people in Nikli Haor are pushed further into poverty due to the misfortune of crops and livelihoods. This economic trouble is often met accompanying disdain and blame, further intensifying the shame encircling their position.

In this place study the peoples of Nikli Haor have crazye their own resilience and managing strategies. Apart from the elementary managing techniques mentioned above, the residents of Nikli Haor is employing a number of unique managing strategies to deal accompanying the emotional consequences of floods.

Aware what commotion before, all the while, and after a flood can help lessen worry and tension. There are plenty materials available to assist individual's learn about flood preparedness and response, to a degree the Bangladesh Water Development Board's Flood Preparedness and Response Guide. Resilience construction in communities: Active together as a society to believe and respond to floods can help to decrease the mental health effect of floods.

Active together as a society to anticipate and respond to floods can assist to decrease the impact of floods on mental health. Making flood preparedness committees and construction society flood response plans are two approaches to increase society resilience.

Floods have a serious influence on the mental health of youngsters in the Nikli Haor area. Floods are a regular open tragedy in this place area, accompanying serious effects for the immature culture. Children in Nikli Haor face a variety of emotional and emotional issues as a result of the periodic inundation of their homes and towns.

Anxiety and Confusion: Children are frequently witnesses to the devastation and displacement caused by floods. Frightening occurrences can cause anxiety, nightmares, and a general sense of uneasiness. They concede possibility be reluctant of the moist season, expecting the next flood accompanying dread.

Floods frequently cause residents to flee their homes. The displacement upsets children's regular routines, containing their effort. All along floods, some youngsters in Nikli Haor concede possibility dividing line in football between offense and defensee classification members, friends, or pets. Dealing accompanying sadness and misfortune at a young age can have long-term emotional consequences, containing melancholy and feelings of seclusion. Floods have the potential to confine communities, separating children from their friends and support networks. Feelings of loneliness and reduced self-esteem can result from friendly seclusion.

To address their needs and foster resilience, it is detracting to realize that the impact of floods on children's mental health in Nikli Haor is a complicated issue that necessitates a comprehensive strategy joining government, non-governmental arrangings, and the society.

Annual floods happen in Nikli Haor proper local river overflow and severe cyclone precipitation. These floods damage the livelihoods of the people in the region, resulting in the devastation of crops, mammals, and homes. As a result, the occupants frequently find themselves in a recurrent cycle of economic and mental adversity.

Agriculture is the main source of income for the adulthood of Nikli Haor people. Floodwaters inundate their farms, resulting insignificant land misfortunees and fiscal inconstancy and insecurity.

Inundation more damages cattle, that is an main asset for the residents of Nikli Haor. The deficit of mammals due to inundation increases their fiscal stress because it symbolizes a deficit of revenue and resources.

Floods can cause damage to houses, highways, and other infrastructure. Repairing or reconstructing a house concede possibility be harmful, dawdling people in debt and under commercial stress.

Conclusion

Annual floods happen in Nikli Haor proper local river overflow and severe cyclone precipitation. Agriculture is the main source of income for the adulthood of Nikli Haor people. Floodwaters inundate their farms, resulting insignificant land misfortunees and monetary imbalance and insecurity. Inundation more damages cattle, that is an iFloods can destroy crops and livestock, depriving people of their income and snack source. This can lead to poverty and commercial catastrophe, that can have a meaningful affect mental health. Floods can displace people from their communities, separating them from their loved ones and support systems. This can lead to seclusion, loneliness, and public anxiety. The mental health effects of inundation can be enduring. Even after the floodwaters have receded, people concede possibility continue to experience anxiety, depression, and Posttraumatic stress disorder. This can have a meaningful affect their capability to function in their dayto-day lives. In the air coolinge of Nikli Haor, a wetland region in Bangladesh namely frequently flooded, the economic impact of the effects of floods on mental health is likely to be specifically severe. Nikli Haor is home to a large number of weak and marginalized people, the one are already vulnerable to economic grief. Inundation can further exacerbate this adversity by destroying homes, crops, and livelihoods. The long-term consequences of floods on mental health are specifically pronounced with the people of Nikli Haor. This is because Nikli Haor is a weak and marginalized region, and the people the one live there are already at an increased risk for mental health problems. Furthermore, the people of Nikli Haor experience floods on a regular support, that increases their risk for developing long-term mental health problems.

It is main to purchase insane energy duties and support for public the one has existed damaged by inundation. This involves providing approach to professional giving advice and healing, in addition to peer support groups.

The research has proved that the intellectual consequences of floods extend beyond the immediate injury of displacement, deficit of property, and livelihoods. They encompass a wide encirclee of mental health issues, containing anxiety, depression, post-frightening stress disorder, and a sense of helplessness. These effects can have enduring and detrimental impacts on the overall well-being of the affected things, families, and the society as a whole.

It is imperative for policymakers, local authorities, and humanitarian institutions to recognize the mental health suggestions of floods and integrate mental health support into their disaster management strategies. This grant permission involve providing access to counseling and mental health services, attending awareness campaigns, and fostering society resilience.

Attractive a proactive approach to flood risk reduction and climate adjustment is critical. By implementing early warning systems, reconstructing infrastructure, and advancing sustainable land use practices, the impact of floods on mental health can be mitigated to a certain extent.

The effects of floods on the mental health of the people of Nikli Haor are deep, and addressing these challenges requires a multi-faceted approach that encompasses disaster preparedness, mental health support, and society resilience-construction. By achievement so, we can not only alleviate the immediate suffering of flood-affected things but further work towards a more resilient and mentally healthy future for the people of Nikli Haor. The misfortune of mammals due to inundation increases their monetary stress because it symbolizes a misfortune of revenue and resources. Floods can cause damage to houses, highways, and other infrastructure. Repairing or reconstructing a house can be damaging, dawdling people in debt and under economic stress.

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