OPEN ACCESS JOURNALS
Indiana Journal of Humanities and Social Sciences
Abbriviate Tittle- Ind J Human Soc Sci
ISSN *(Online)*- 2582-8630
Journal Homepage Link- https://indianapublications.com/journal/IJHSS
DOI: https://doi.org/10.5281/zenodo.14775227

INDIANA PUBLICATIONS
PRODUCTIVE AND QUALITY RESEARCH

Research Article

Volume-06|Issue-01|2025

Gender Disparities in Disaster Preparedness: Insights from Rural Bangladesh

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Article History
Received: 07.01.2025
Accepted: 25.01.2025
Published: 31.01.2025

Citation
Begum, S., Koli, K., Moniruzzaman., Hossain, S. (2025). Gender Disparities in Disaster Preparedness: Insights from Rural Bangladesh. *Indiana Journal of Humanities and Social Sciences*, *6*(1), 25-34.

Abstract: This study aims to assess household disaster preparedness and knowledge while also performing a gender analysis of overall preparedness levels. The study was conducted in Subarnachar Upazila, Noakhali District, Bangladesh. This research employed both primary and secondary sources for data collection. A random sample method was employed to eliminate bias and guarantee that every respondent had an equal chance of selection. The study included interviews with 180 home participants, consisting of 52.78% males and 47.22% females, aged between 18 and 90 years. A checklist was developed to evaluate readiness levels, incorporating critical emergency components necessary for mitigating the negative impacts of disasters. The components of the disaster readiness checklist, such as access to potable water, non-perishable food, first aid supplies, evacuation strategies, and emergency healthcare planning, demonstrated statistical significance concerning gender ($p < 0.05$), as evidenced by independent t-test results. Neither gender demonstrated statistically significant results for additional components, such as emergency funds, sanitation and hygiene items, and disaster preparedness training ($p \geq 0.05$). The study found that females exhibited greater vulnerability to insufficient access to essential resources, including training, preparedness exercises, and early warning systems. It was concluded that enhancing women's capacity is essential through community collaboration and the increase of public awareness.

Keywords: gender disparities, disaster preparedness, household preparedness, emergency resources, public awareness

INTRODUCTION

Bangladesh is one of the most disaster-prone countries in the world as a result of its low-lying topography and geographical location. The population of the nation is significantly affected by the frequent occurrence of cyclones, floods, and other climate-related hazards. The frequent occurrence of natural calamities, including cyclones, floods, and droughts, is attributed to the geographical characteristics of Bangladesh, which include its proximity to the Bay of Bengal, the Himalayan range to the north, and the largest river delta in the world (Adrc, 2013; Ahmed, 2013). Bangladesh is one of the most at-risk countries in the world, as it is highly vulnerable to extreme weather and geophysical occurrences, according to a study conducted by the World Disaster Index (2017). Bangladesh was also ranked as the eighth-worst afflicted country in the 2018 World Disasters Report, with an estimated 37 million individuals affected by natural disasters between 2008 and 2017 (IFRC, 2018). These events have caused a loss of life, property, and economic damage, with 191,836 fatalities recorded from disasters over the past 30 years (World Disaster Index, 2017).

In order to mitigate the effects of such events, domestic disaster preparedness is essential, given the high level of vulnerability. Nevertheless, research has demonstrated that preparedness is inconsistent among various demographics, with gender disparities contributing to variations in vulnerability and response during disasters. During disasters, women in Bangladesh are frequently at a disadvantage in terms of access to resources, preparedness training, and decision-making (Nasreen, 2012; Ikeda, 1995). Women's mobility and access to resources such as emergency funds, sanitation supplies, and preparedness information are restricted by traditional gender roles, which confine them to domestic spheres. Their participation in preparedness exercises and early warning systems is also restricted by this gender-based inequality, which renders them more susceptible to disasters (Begum et al., 2014; Hossain & Paul, 2018). Research has shown that the vulnerability of women is further exacerbated by the fact that males are more likely to have access to critical emergency resources (Nasreen, 2012; Ikeda, 1995).

Gender-responsive disaster management strategies have been demonstrated to improve resilience at both the domestic and community levels on a global scale. Fordham et al. (2013) and Nazneen & Bari (2017) have demonstrated that the overall preparedness and response capabilities can be enhanced by empowering women through awareness campaigns, community engagement, and targeted training. These methods have been incorporated into frameworks such as the Sendai Framework for Disaster Risk Reduction (2015-2030), which promotes the involvement of women in disaster prevention, recovery, and policymaking (UNDRR,

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2015). Bangladesh can enhance its disaster preparedness and resilience by removing the obstacles that impede women's access to resources and decision-making. It is imperative to implement gender-sensitive policies and community-based disaster preparedness programs that are tailored to the unique requirements of women in order to mitigate the adverse effects of natural disasters on vulnerable populations.

Additionally, traditional gender norms and socio-cultural factors exacerbate the vulnerabilities of rural women in Bangladesh, particularly those residing in coastal regions. Research on gender and disaster preparedness in littoral regions indicates that women are frequently the most vulnerable during disasters as a result of their exclusion from decision-making processes and their restricted access to resources. In these regions, women frequently depend on traditional knowledge and skills to manage homestead-based livelihoods, including livestock, fisheries, and crop production, in order to contend with disasters (Islam, 2010). Although these coping mechanisms are beneficial, they are insufficient to guarantee resilience in the presence of more frequent and severe disasters. Scholars and practitioners underscore the necessity of resilience-building initiatives at the domestic and community levels, as well as gender-sensitive disaster risk management, in order to address these challenges.

A number of initiatives have been implemented by the Bangladeshi government to resolve disaster preparedness and response. The National Plan for Disaster Management (NPDM 2021-2025), which is overseen by the Ministry of Disaster Management and Relief (MoDMR), delineates strategies that are consistent with national, regional, and international frameworks, such as the Sendai Framework and the Delta Plan 2100 (MoDMR, 2021). These endeavors are centered on the improvement of resilience by implementing comprehensive disaster management strategies, such as community-based preparedness programs, emergency relief mobilization, and early warning systems.

In summary, it is imperative to resolve gender disparities in disaster preparedness in order to establish resilience in Bangladesh. Many women, particularly those residing in rural and coastal regions, encounter substantial obstacles that restrict their capacity to anticipate and respond to disasters. Bangladesh can enhance its disaster preparedness and mitigate the effects of natural hazards on vulnerable populations by empowering women, increasing their access to resources and information, and involving them in decision-making processes.

LITERATURE REVIEW

Bangladesh, recognized for its vulnerability to various disasters, regularly encounters natural hazards such as cyclones, floods, and river erosion. The identified hazards underscore the critical need for household-level disaster preparedness to effectively reduce risks. Despite continuous efforts to enhance resilience, disparities related to gender in disaster preparedness remain, with women frequently facing a heightened level of vulnerability due to a mix of social, cultural, and economic influences (Nasreen, 2012; Enarson & Chakrabarti, 2009). Studies have consistently indicated that women in Bangladesh face more significant challenges in disaster preparedness. Conventional gender roles frequently restrict women to household responsibilities, hindering their involvement in community preparedness initiatives. The limitations placed on women's mobility and their access to essential resources like emergency funds, sanitation supplies, and training materials have significantly hindered their ability to respond effectively in times of disaster (Hossain & Paul, 2018; Begum et al., 2014). Nasreen (2012) emphasizes that these limitations, coupled with restricted access to early warning systems, lead to delayed or insufficient responses, which further intensify the vulnerability of women. In his 1995 study on the 1991 cyclone, Ikeda found that vulnerabilities specific to gender played a significant role in the elevated fatality rates among women, who frequently faced exclusion from evacuation plans and had limited access to timely warnings. The results highlight the importance of incorporating gender-sensitive strategies in disaster preparedness, focusing on overcoming structural obstacles and cultural constraints that affect women's agency.

Quantitative analyses have provided deeper insights into the disparities related to gender in accessing resources for disaster preparedness. For example, research indicates that men tend to have greater access to essential resources like dry food, water, and emergency funds in times of disaster, while women frequently face shortages of these resources due to economic dependency and restricted access to training (Hossain & Paul, 2018; Neumayer & Plümper, 2007). The economic challenges faced by women, especially in rural Bangladesh, significantly restrict their capacity to invest in emergency supplies or preparedness training. Furthermore, research indicates that the participation of women in preparedness drills and their access to early warning systems is markedly less than that of men, which exacerbates their vulnerability and perpetuates gender-based inequalities in disaster resilience (Fordham et al., 2013).

In light of these disparities, there is a strong call for inclusive disaster preparedness programs that are specifically designed to meet the unique needs of women. Fordham et al. (2013) emphasize the critical role of public awareness campaigns and community collaboration in enhancing women's preparedness and risk reduction initiatives. Nazneen and Bari (2017) contend that incorporating women's perspectives into preparedness planning through gender-sensitive policies

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in disaster management can greatly diminish vulnerability and enhance resilience. These methods have demonstrated effectiveness in various disaster-prone areas, where the involvement of women in decision-making and preparedness efforts has resulted in enhanced community resilience (Enarson & Chakrabarti, 2009).

Investigations into household disaster preparedness highlight that successful preparedness encompasses more than mere access to resources; it necessitates awareness of evacuation routes, the capacity to communicate during emergencies, and the willingness to take action when disaster occurs (Ablah et al., 2009; Eisenman et al., 2006). Findings indicate that households exhibiting greater levels of preparedness tend to respond more effectively to disasters, thereby minimizing loss of life and property damage. This is especially important in Bangladesh, where a significant portion of the population resides in areas that are highly susceptible to flooding.

Recent studies utilizing statistical methods, including independent t-tests, indicate that men generally have greater access to essential preparedness resources, such as emergency funds and food supplies, compared to women (Hossain & Paul, 2018). The distribution of preparedness components, such as sanitation supplies and emergency cash reserves, often reveals gender disparities, with women facing additional barriers to access (Begum et al., 2014). The identified disparities highlight the need for targeted strategies to ensure equitable access to resources for disaster preparedness for women. Addressing gender-based disparities necessitates enhancing women's disaster preparedness through training, increasing public awareness, and promoting active participation in community preparedness efforts. Research by Fordham et al. (2013) and Nazneen and Bari (2017) demonstrates that including women in resilience-building initiatives enhances disaster outcomes, as women often play critical roles in household and community preparedness efforts. Improving the role of women via strategic policies, education, and skill development can enhance inclusive and effective disaster preparedness strategies, thus strengthening community resilience.

The existing body of work emphasizes the importance of tackling gender disparities in disaster preparedness to enhance resilience in regions vulnerable to disasters, such as Bangladesh. In Bangladesh, women encounter distinct obstacles stemming from restricted mobility, limited access to resources, and entrenched gender roles, which can impede their capacity to adequately prepare for and respond to disasters. Implementing gender-sensitive policies and increasing public awareness can significantly enhance household preparedness and community resilience in Bangladesh, thereby minimizing the gender gap in disaster vulnerability.

METHODOLOGY

Study Area

The research was conducted at Subarnachar Upazila, Noakhali. It is located in the coastal region of Noakhali, positioned between 22°28' and 22°44' north latitudes and between 90°59' and 91°20' east longitudes. In 2005, a new Upazila named Subarnachar Upazila was created by extracting seven unions from Noakhali Sadar. According to the 2011 Bangladesh census, Subarnachar Upazila has a population of 290,000. Subarnachar, owing to its coastal position, often encounters natural calamities including floods, cyclones, and storm surges.

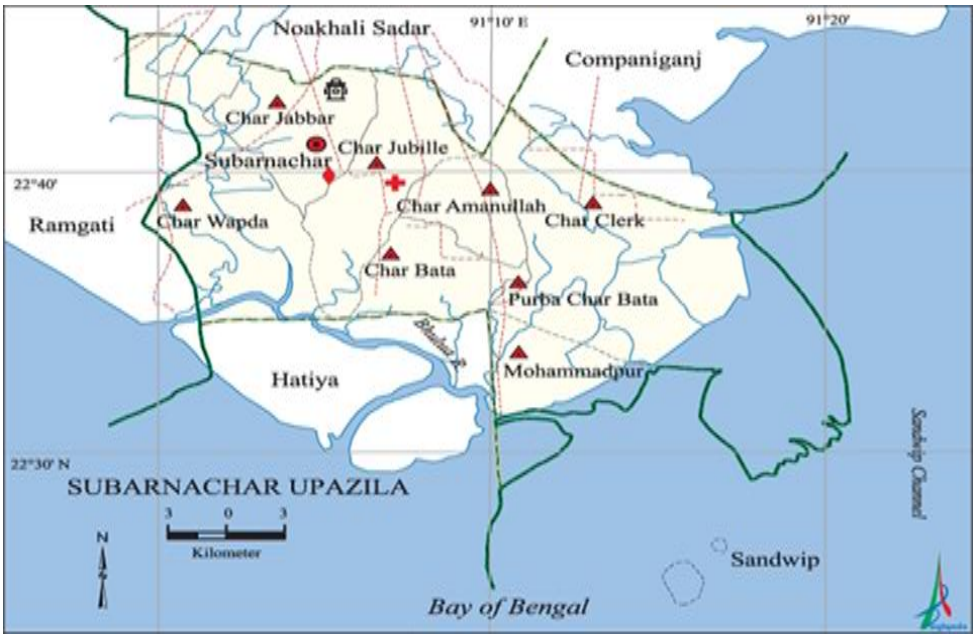

Figure 1: Map of Subarnachar Upazila, Noakhali

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Study design and data collection

The analysis involved a sample size of 180 participants. A purposive sampling method was used. A structured questionnaire was used to collect quantitative data. In order to validate the collected quantitative data, focus group discussions (FGD), key informant interviews (KII), and case studies have been carried out. Data entry and tabulation were conducted using SPSS 17 and Epilnfo software. A T-test was employed to analyze the relationship between gender and the components of the disaster preparedness checklist. The checklist consists of three sections: 1. supply checklist for use during a disaster, 2. checklist for disaster preparedness skills, and 3. checklist for disaster preparedness planning.

Objective of the Study

The main objectives of the study were to identify gender differences and the overall state of household preparedness. The specific objectives were to know the types of disaster preparedness and perception and to find out the gender dimension of disaster preparedness in the region of Subarnachar, Noakhali.

Research Hypothesis

The null hypothesis was "Male and female have the same level of preparedness."

RESULTS AND DISCUSSION

Demographic Characteristics

The findings indicated that among the 180 participants, 52.78% identified as male, while 47.22% identified as female. The data indicates that a significant portion of respondents, specifically 59.44%, fell within the 26 to 50 year age range, whereas a smaller segment, accounting for 17.78%, was aged 51 years or older. A significant portion of the respondents, specifically 77.22%, indicated that they reside in a Tin-Shed house. The data from the study indicates that 83.33% of the respondents identified as single-family households. The socio-economic status reveals that 42.78% of the population belongs to the lower class, 20.56% to the lower middle class, and 20.00% to the middle class. The findings indicate that 82.78% of the participants are married, 12.78% are single, and 4.44% are widows. The findings indicate that 36.11% of the population is without formal education. 28.33% of individuals are participating in primary education. The analysis indicates that 17.22% of the population holds an SSC or equivalent qualification, 7.22% has an HSC or equivalent, 8.33% is graduated or equivalent, and 2.78% has achieved a postgraduate or equivalent level of education. The primary occupations of the households include auto-rickshaw drivers at 0.56%, fishermen at 0.56%, tailors at 1.67%, laborers at 0.56%, service holders at 5.00%, and masons at 1.67%. The percentage of technicians/mechanics stands at 0.56%, while the business sector accounts for 12.785%. Farmers represent 12.78%, and farming laborers make up 1.11%. Day laborers constitute 20.22%, whereas teachers are at a mere 1.67%.

Information on Disaster Preparedness

In Bangladesh, the Ministry of Food and Disaster Management (MoFDM) has enacted important strategies to address and reduce the impact of disasters. The measures encompass the construction of cyclone and flood shelters, the erection of flood protection embankments, the adoption of disaster management plans and policies, the establishment of an institutional framework, the creation of a clear and effective warning system, awareness-raising campaigns, training programs in disaster preparedness, community first aid, and cyclone shelter maintenance, as well as the installation of drinking water and food storage facilities, alongside the social safety net program (MoFDM, 2007). This study has developed a comprehensive checklist aimed at collecting data regarding disaster preparedness. The checklist comprised three sections: 1. supply checklist for use during a disaster; 2. skill checklist for disaster preparedness; and 3. planning checklist for disaster preparedness. The checklist was meticulously crafted to encompass the fundamental requirements for disaster prevention, featuring a total of 33 elements. The table indicates that, within the study area, aside from a limited number of items such as access to a radio (15.56%) for emergency signaling, first aid training (25.56%), disaster preparedness drills (22.78%), first aid kits (25%), and water purifier tablets (30%), the respondents reported satisfactory facilities (at least 50% or higher) during the disaster.

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Table1: Percentage Distribution of The Supply Elements Received by The Respondents During the Disaster

Supply Checklist During the Disaster			
SL No.	**Item**	**Yes**	**No**
1	Clean water	46.67	53.33
2	Water purifier tablet	30.00	70.00
3	Dry Food	51.67	48.33
4	Cloths for adult	68.33	31.67
5	Clothes for children	75.00	25.00
6	Blanket	73.33	26.67
7	Mosquito net	56.11	43.89
8	Tarpaulin/ tent	39.44	60.56
9	Matches	60.00	40.00
10	Flashlight/ torch	52.22	47.78
11	Radio	15.56	84.44
12	Battery	20.00	80.00
13	First aid kit (gauze bandage, scissors, gloves, savloon, antiseptic cream)	25.00	75.00
14	Whistle	8.33	91.67
15	Boat	16.67	83.33
16	Money	56.11	43.89
17	Photocopy of important papers and id card	63.33	36.67
18	Emergency contact number	50.00	50.00
19	Sanitation and hygiene item (soap, detergent powder, sanitary pad)	51.67	48.33

Source: Field Survey, 2022

Disaster Preparedness Skills

Reducing the number of lives lost and the number of people who lose their livelihoods is a primary goal of disaster preparedness. The United Nations International Strategy for Disaster Reduction (UNISDR, 2009) defines preparedness as the knowledge, capabilities, and actions of governments, organizations, community groups, and individuals "to effectively anticipate, respond to, and recover from the impacts of likely, imminent, or current hazard events or conditions." Preparedness is defined as the ability to effectively anticipate, respond to, and recover from the devastating effects of hazard events or conditions. The findings of the survey indicate that just 25.56% of respondents had gotten training in first aid, 22.78% had participated in a disaster preparedness simulation, and only 28.33% had received training in disaster preparedness.

Table 2: Percentage Distribution of The Elements of Disaster Preparedness Skill Included in The Checklist

Disaster preparedness skill checklist			
SL No.	**Item**	**Yes**	**No**
1	First aid training	25.56	74.44
2	Disaster preparedness drill	22.78	77.22
3	Disaster preparedness training	28.33	71.67
4	Knowledge of disaster from school	51.11	48.89
5	Preparing oral saline	87.22	12.78
6	Skill of swimming	75.56	24.44

Source: Field Survey, 2022

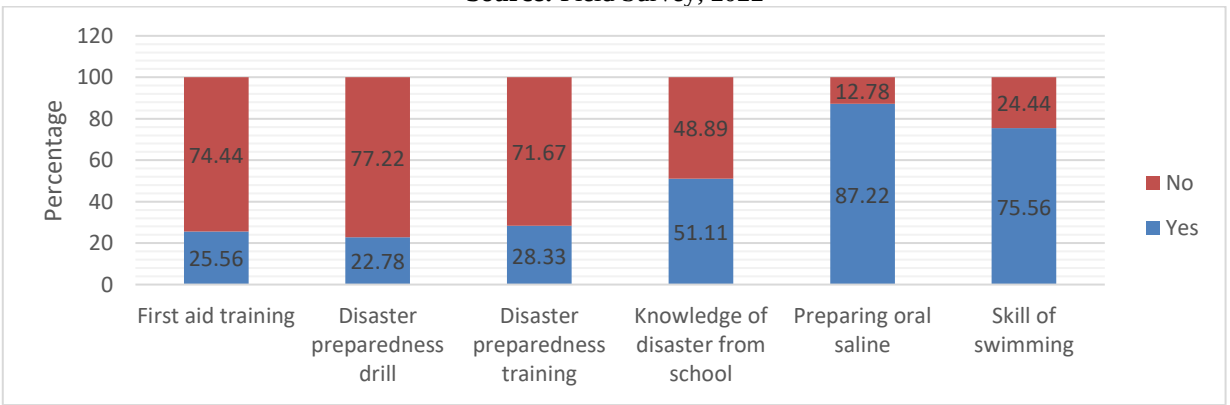

Figure 2: Percentage Distribution of the Elements of Disaster Preparedness Skill Included in the Checklist
Source: Field Survey, 2022

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The stacked bar chart visualizes the proportion of individuals with and without various disaster preparedness skills. Insights of the above stacked bar as follows:

Low Preparedness Skills: Skills like First aid training, Disaster preparedness drill, and Disaster preparedness training show low "Yes" percentages (around 22% to 28%), meaning the majority of individuals lack these important disaster preparedness skills.

Moderate Knowledge from School: Knowledge of disaster from school has a roughly even split, with about 51% having learned disaster-related knowledge, but nearly half have not. High Practical Skills: Preparing oral saline and Skill of swimming show high "Yes" percentages (87% and 75%, respectively). These are critical survival skills that most individuals seem to possess.

The chart highlights areas where disaster preparedness can be improved, particularly in training and drills, while showing strengths in practical skills like swimming and oral saline preparation. It serves as a clear indicator of where to focus future preparedness efforts.

Disaster Preparedness Planning

The National Plan for Disaster Management (NPDM 2021-2025) emphasizes the government's commitment to mitigating risks faced by vulnerable populations due to natural and human-induced hazards. It aims to establish an effective emergency response system for managing significant events and facilitating post-disaster recovery. The study area revealed that the minimum level of disaster preparedness planning includes emergency food supply, emergency drinking water supply, emergency health care, emergency transportation, emergency communication planning, and specialized emergency preparedness plans for children, pregnant women, the elderly, and the disabled, in addition to evacuation planning. However, only 36.15% of respondents indicated that they have access to a safe meeting place during a disaster, which is quite low.

Table 3: Percentage Distribution of The Elements Disaster Preparedness Planning Included in The Checklist

Disaster preparedness planning checklist			
Serial No.	**Item**	**Yes**	**No**
1	Emergency food supply planning	65.00	35.00
2	Emergency drinking water supply planning	50.56	49.44
3	Emergency health care planning	62.78	37.22
4	Transportation planning	63.89	36.11
5	Communication planning	56.11	43.89
6	Evacuation planning	53.33	46.67
7	Safe meeting place	36.11	63.89
8	Special emergency preparedness plan for children, pregnant women, elderly and disabled	62.22	37.78

Source: Field Survey, 2022

This data set is a checklist for evaluating disaster preparedness plans; it details different types of preparation and displays the proportion of people who said they had these preparations in place, with "Yes" being the most common response and "No" being the least common. Give me a rundown on this:

While 65% of people said they had a plan for emergency food supplies, 35% said they weren't ready. Just over half (50.56%) had contingency plans in place for the supply of potable water in the event of an emergency, while almost half (49.54%) did not. This suggests that there is space for improvement in this area. Emergency Healthcare Planning: While 36.22 percent did not have an emergency healthcare plan, 62.78 percent did. While 63.89 percent of people polled had mobility plans in place, 36.11 percent were completely unprepared. Among those who had communication strategies, slightly more than half (56.11%) had them in place, while 43.89 percent did not. A little over half (53.33%) had evacuation plans, but a significant 46.67% were missing this essential component.

The majority of people (63.89%) did not have a specified safe gathering site in the event of a disaster, whereas only 36.11 percent did. This is a large disparity. An overwhelming 62.22% had specific strategies in place to assist vulnerable populations, such as children, pregnant women, the elderly, and the disabled; however, 33.78% did not. Important Findings: With scores above 60%, emergency food supply, transportation, and healthcare preparation stand out as the strongest areas of readiness. One critical issue that needs immediate attention is the low level of preparedness observed in the safe meeting site (36.11%). It is crucial to focus on enhancing evacuation plans, communication strategies, and water supply preparation, as these areas are still below 60%.

Independent Sample T test

Independent sample T test were conducted based on the checklist divided into three parts: 1. Supply checklist during the disaster, 2. Disaster preparedness skill checklist, and 3. Disaster preparedness planning checklist.

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Table 4: Independent Sample T Test (N = 180).

	Supply Check List of Disaster Preparedness (n-180)	Sex of the respondent (Male n-95, Female n-85)	Mean	Std. Deviation	Sig.(2-tailed)
	Supply checklist during the disaster				
1	Clean water	Male	1.20	0.50	0.001
		Female	1.49	0.65	
2	Water purifier tablet	Male	1.45	0.82	0.160
		Female	1.61	0.67	
3	Dry Food	Male	1.20	0.78	0.026
		Female	1.45	0.68	
4	Cloths for adult	Male	1.41	0.49	0.202
		Female	1.51	0.50	
5	Clothes for children	Male	1.14	0.35	0.000
		Female	1.38	0.49	
6	Blanket	Male	1.15	0.36	0.000
		Female	1.40	0.49	
7	Mosquito net	Male	1.17	0.38	0.000
		Female	1.41	0.50	
8	Tarpaulin/ tent	Male	1.65	0.48	0.005
		Female	1.84	0.37	
9	Matches	Male	1.39	0.49	0.535
		Female	1.44	0.50	
10	Flashlight/ torch	Male	1.20	0.40	0.000
		Female	1.45	0.50	
11	Radio	Male	1.58	0.50	0.000
		Female	1.85	0.36	
12	Battery	Male	1.68	0.47	0.167
		Female	1.78	0.42	
13	First aid kit (gauze bandage, scissors, gloves, savlon, antiseptic cream)	Male	1.49	0.50	0.006
		Female	1.69	0.46	
14	Whistle	Male	1.85	0.36	0.010
		Female	1.96	0.19	
15	Boat	Male	1.78	0.42	0.110
		Female	1.87	0.24	
16	Money	Male	1.38	0.49	0.445
		Female	1.44	0.50	
17	Photocopy of important papers and id card	Male	1.45	0.50	0.583
		Female	1.41	0.50	
18	Emergency contact number	Male	1.57	0.50	0.024
		Female	1.73	0.45	
19	Sanitation and hygiene item (soap, detergent powder, sanitary pad)	Male	1.39	0.49	0.160
		Female	1.49	0.50	

Table 5: Independent Sample T test (n = 180).

	Disaster preparedness skill checklist	Sex of the respondent (Male n-95, Female n-85)	Mean	Std. Deviation	Sig.(2-tailed)
1	First aid training	Male	1.65	0.48	0.000
		Female	1.95	0.21	
2	Disaster preparedness drill	Male	1.78	0.42	0.021
		Female	1.91	0.29	
3	Disaster preparedness training	Male	1.63	0.48	0.705
		Female	1.66	0.48	
4	Knowledge of disaster from school	Male	1.58	0.50	0.038
		Female	1.42	0.50	
5	Preparing oral saline	Male	1.24	0.43	0.500
		Female	1.20	0.40	
6	Skill of swimming	Male	1.15	0.36	0.010
		Female	1.31	0.46	

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Table 6: Independent Sample T test (n = 180).

	Disaster preparedness planning checklist	Sex of the respondent (Male n-95, Female n-85)	Mean	Std. Deviation	Sig.(2-tailed)
1	Emergency food supply planning	Male	1.41	0.49	0.016
		Female	1.55	0.50	
2	Emergency drinking water supply planning	Male	1.51	0.50	0.007
		Female	1.68	0.47	
3	Emergency health care planning	Male	1.35	0.48	0.001
		Female	1.60	0.49	
4	Transportation planning	Male	1.32	0.47	0.001
		Female	1.56	0.50	
5	Communication planning	Male	1.27	0.45	0.051
		Female	1.41	0.50	
6	Evacuation planning	Male	1.29	0.46	0.034
		Female	1.45	0.50	
7	Safe meeting place	Male	1.42	0.50	0.006
		Female	1.62	0.49	
8	Special emergency preparedness plan for children, pregnant women, elderly and disabled	Male	1.47	0.50	0.008
		Female	1.28	0.46	

With the purpose of putting the central hypothesis to the test, an independent t-test was carried out to determine whether or not there is a statistically significant difference between males and females in terms of disaster preparedness, as outlined in the preparedness checklist. During the process of testing the core hypothesis, the null hypothesis, which states that "male and female have the same level of preparedness," was utilized. According to the findings presented in Tables 4, 5, and 6, a minor number of characteristics or possessions were found to be statistically significant with respect to males and females. It was discovered that some factors, including the availability of clean water, dry food, first aid kits, first aid training, the possession of sanitary items, and disaster readiness drills, yielded significant results ($P<0.05$). Because of this, we are able to contradict the null hypothesis about those items on the checklist and come to the conclusion that males and girls in the area under study are not equally prepared for a disaster. It also suggests that males and females possess significantly different levels of preparedness in the event of a crisis. The remaining items on the checklist, which were Tables 4, 5, and 6, were not statistically significant ($P > 0.05$), despite the fact that they were significantly more important than the others. It is not possible to reject the null hypothesis and come to the conclusion that males and females have the same level of readiness when it comes to those factors. After conducting research, it has been discovered that the majority of women do not have access to essential resources such as training, readiness drills, and the ability to hear alerts during times of emergency.

CONCLUSION

Noakhali is an area that consistently experiences a range of disasters annually, highlighting its vulnerability. The socio-economic conditions of the affected populations are frequently impacted by these disasters, necessitating efforts to mitigate these effects for the sake of sustainable development. This study revealed variations between genders concerning various disaster preparedness checklists. Nonetheless, it is not appropriate to draw definitive conclusions regarding the preparedness of males versus females based solely on our checklist, as only a limited number of components demonstrated statistical significance. Nevertheless, other components exhibited no disparities in preparedness between males and females.

In general, the participants demonstrate a solid understanding of disaster preparedness, management, food, water, health, and sanitation, although a portion of the individuals provided differing responses. In Subarnachar, the frequent occurrence of disasters leads individuals to gain a deeper understanding of the associated risks, damages, and overall magnitude of such events. This equips individuals to handle a catastrophic scenario, and their expertise aids in managing both immediate and future planning. This illustrates the rationale behind individuals implementing strategic approaches to manage the challenges posed by disasters. Although many individuals possess a considerable understanding of disasters and the importance of preparedness, they often find themselves lacking the necessary resources to effectively mitigate such events. To mitigate the negative impact of the risks they present, they cannot act independently; instead, they have proposed that the government undertake efforts. The findings indicate insufficient disaster preparedness, inadequate training, and the absence of an emergency plan among the women. Certain elements of the checklist indicate that women exhibit a marginally higher level of disaster preparedness compared to men. The findings

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from the FGD and Case Studies report indicate that the capacity of the individuals studied in Subarnachar is lacking, particularly among females. It is essential to enhance the educational and training levels of the vulnerable populations within the study area. Enhancing the capacity and coping strategies of women is essential to mitigate the vulnerability of women and children during disasters. The government must prioritize providing women with increased access to training programs focused on disaster management.

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