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Original Article

Does Family Type Matter for Farmers' Social Participation and Social Support During Waterlogging? An Analysis from Social Health Perspectives

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Abstract

Background: People often overlook social health, believing it is less significant for humans. Family types may influence social participation and support during a disaster. In addition, members of the joint family experience more mental pressure during a crisis than members of the nuclear family.

Objectives: This study aimed to assess the impact of family type on their social health, particularly social participation and social support.

Methods: This study follows the survey research design to collect data from 480 waterlogged farmers using simple random sampling. I have formed a social health scale based on a 4-point Likert scale encompassing social participation and support. I performed the Mann-Whitney U test and multinomial logistic regression to indicate the differences in the influences of family type and its extension on social health.

Results: Most of the waterlogged farmers did not participate in social activities, but they received support from their family members. More than 50% of the farmers had medium (11–15) social participation during waterlogging. However, 56% of them received high (12≥) social support from their family. Statistically significant differences were found between farmers' family type and their political participation (z =- 4.204), religious congregation (z=-5.376), and watching television (z=-4.964). However, for social support, reliance on family members at the time of having a serious problem (z=-5.376) showed a difference between the issues. In terms of the social health scale, the social participation (z=-4.726, p<0.001) of the farmers who lived in joint families differed more than that of social support (z=-2.038, p<0.05). Joint families influenced farmers with low social participation (B =.814, CI, 955 to 5.329) 2.25 times more and farmers with low social support (B=1.03, CI, .325 to 22.395) 2.81 times more.

Conclusion: Joint families impacted farmers' social health more than nuclear families. Family treatment should be considered an important source of social health protection, particularly in disaster situations.

Keywords: Family Type, Social Participation, Social Support, Waterlogging, Social Health

Introduction

Bangladesh, a low-lying deltaic country, has several major rivers with tributaries and distributaries that traverse the country. These rivers sometimes become a source of agony instead of blessings. Since the beginning of the 21st century, natural changes in river flow have resulted in an increase in sediment in riverbeds due to reduced sediment deposition on floodplains protected by embankments. Additionally, a lack of proper sedimentation has led to reduced upstream flow, which has ultimately contributed to river siltation and waterlogging (Alam et al., 2017). This disaster can change the role of social structure, particularly the changes in the family structure in which there is a clear move from joint or extended to the nuclear family, in determining health status by decreasing social support. Natural disasters interact with social structures, causing victims to experience both pathological problems and negative feelings about their lives, which can lead to negative emotional states (Gim & Shin, 2022; Park et al., 2021). However, maladaptive responses to disasters may cause mental health problems such as depression and anxiety (Thapa et al., 2018). When damage is extensive and prolonged, various social adjustment problems can result (Cho et al., 2017). Disaster-induced displacement influences the social, economic, and health aspects of the victim (Bris & Bendito, 2019). There was a significant correlation between disaster distress, social support, depression, and anxiety (Park et al., 2021; Lee et al., 2017; Ngamaba et al., 2017). For farmers, family type is one of the most important aspects because disaster preparation depends on its type. There is a consistent relationship between family formation and various types of religious involvement (Uecker et al., 2016; Smith, 2024). Significant life changes due to health crises led to changes in the family's financial situation, severe restrictions on movements, and the cancellation of important activities.
Disaster victims suffer from physical and psychological health problems due to the loss of their family, friends, property, belongings, and employment. The individual vulnerability factors are relatively static, and among them, being female, less educated, and living in a nuclear family predisposes to psychiatric symptoms. Social participation (SP) is an aspect of social health. It refers to an individual's role in reinforcing social relationships, social support, and social integration, resulting in improved health and related outcomes (Chen & Xiao, 2022). Interactions with others in a society are considered core aspects of social participation. Because interacting with others speeds up the body's response to health shocks (Ma et al., 2020) and the start of diseases, functional disability, mental health disorders (Ackermann, 2019; Erdurmazli, 2019), and cognitive impairment (Jones & Berry, 2017; Ertas, 2020), social participation lowers the risk of depression and cognitive impairment and improves aspects such as self-rated health, well-being, life satisfaction, quality of life, and the ability to control negative emotions and maintain a positive sense of self and worth (Zhou et al., 2020; Lee & Jean Yeung, 2019). Further, the association between social participation and health may differ depending on the type of activity and place of residence (Vogelsang, 2016). Disaster crises may force people to be involved in politics (Fair et al., 2017) to dampen the effects of socioeconomic losses and emotional consequences (Rudolph & Kuhn, 2018).

However, a person's overall level of well-being, social networks, levels of satisfaction, and life situation influence their political participation (Mattila et al., 2017; Luong, et al., 2011; Douglas et al., 2017; Curvers et al., 2018; Vozikaki et al., 2017). It promotes activity and health (Turcotte et al., 2018) and reduces social isolation and loneliness (Gardiner et al., 2018). Numerous studies have documented the benefits of volunteering for both physical and mental health, and they may intensify these benefits (Anderson et al., 2014; Jenkinson et al., 2013; Kim et al., 2020; Ajrouch et al., 2016; Carr et al., 2018; Webster et al., 2021). Social support was a partial mediator between disaster distress, anxiety, and depression (Park et al., 2021). It protects mental health conditions (Thapa et al., 2020). Enhancing social support may reduce the negative effect of disaster distress on depression and anxiety (Rung et al., 2017; Park et al., 2021). In particular, perceived social support is an important buffer against negative health development after adversity, protecting against general mental and physical health problems (Shallcross et al., 2016). A correlation exists between social networking and social support. Social networks shrink during a disaster, and these changes can put people at risk for social isolation and loneliness, both of which have been associated with negative health outcomes (Leigh-Hunt et al., 2017) and early mortality (Holt-Lunstad et al., 2015). However, it may also be positively associated with health outcomes (Yokoyama et al., 2014; Ma et

al., 2020). So far, the issue has received very little research. This study aimed to assess the impact of family type on waterlogged farmers' social health based on social participation and support in the family.

Research questions

1. Which type of family (nuclear or joint) influences farmers' social health during waterlogging?
2. To what extent are the influences exerted on farmers' social health?

Conceptual framework

Social health, according to this study, includes social participation and support. Family type influences all six aspects of social participation. However, misunderstandings, mistrust, a lack of sharing of concerns, and criticism can disrupt family support. Furthermore, these issues are specific to certain family types. Therefore, family types predominantly affect the social health of farmers (Figure 1).

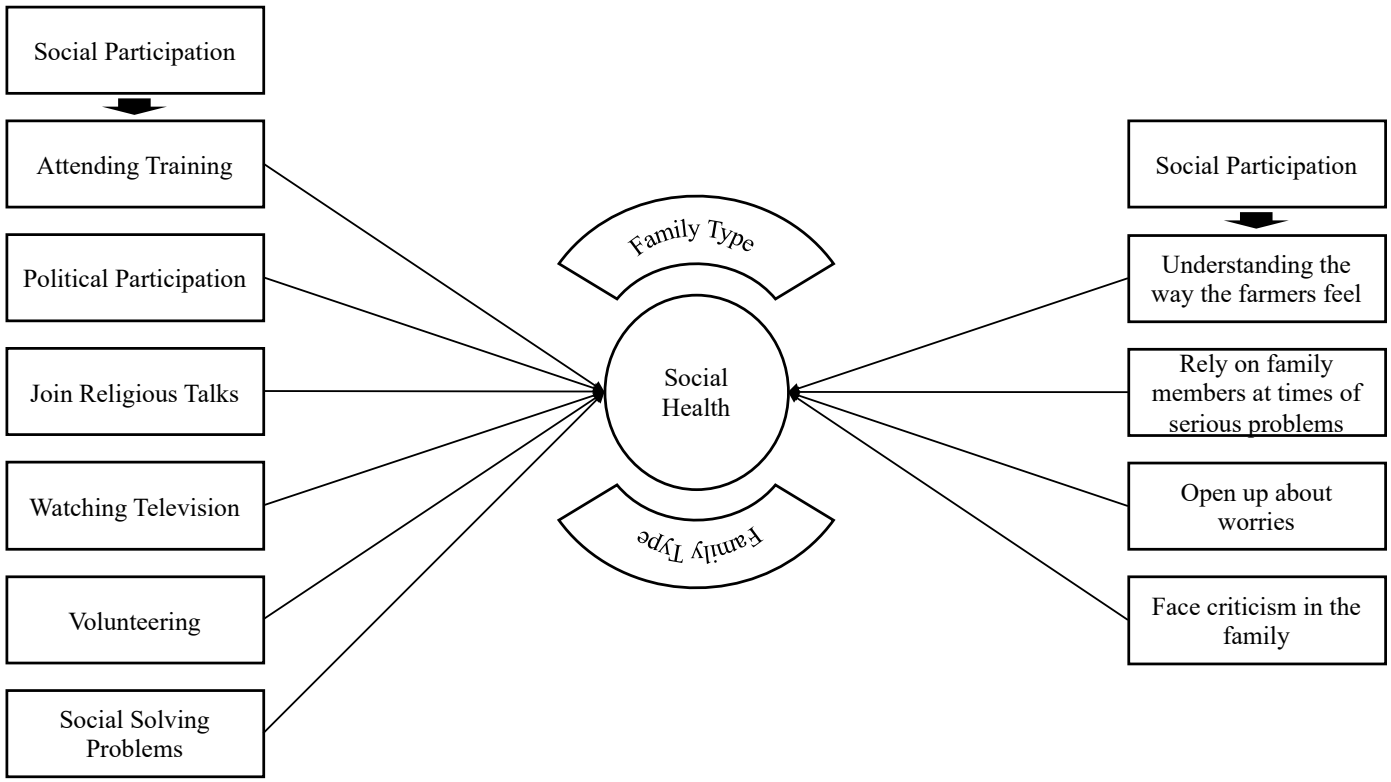

Figure 1. Family Type and Social Health

Methods

Design and study site

This research follows the survey research design. The Bhabadaha point is primarily responsible for perennial waterlogging in three upazilas: Abhoyanagr, Manirampur, and Keshabpur. I purposefully selected the first two Upazilas (Figure 2, marked with a red rectangle) for the study. I then selected 12 villages from 6 unions, primarily located in waterlogged zones, to serve as the study area for this research. Each union has two villages. The villages are shown in table 1. These geographically low-lying areas submerge at the start of the monsoon, inundating the cultivable land for approximately eight months each year. Over the last three decades,

waterlogging has typically caused significant hardship for the farmers in these villages. Most of them are directly involved in agricultural activities.

Table 1. Study areas by union and village

Upazila	Union	Village	No. of villages
Manirampur	Durbadanga	Kaminidanga,Kushorikona	
	Kultia	Hatgacha, Sujatpur	
	Haridashkati	Nebugati, Kuchlia	Total 12 villages
Abhoyanagr	Pairahat	Paira, Barandi	
	Chalisia	Andha, Bolarabad	
	Sundali	Dharmashiahati, Fulergati	

(Source: Fieldwork, 2023)

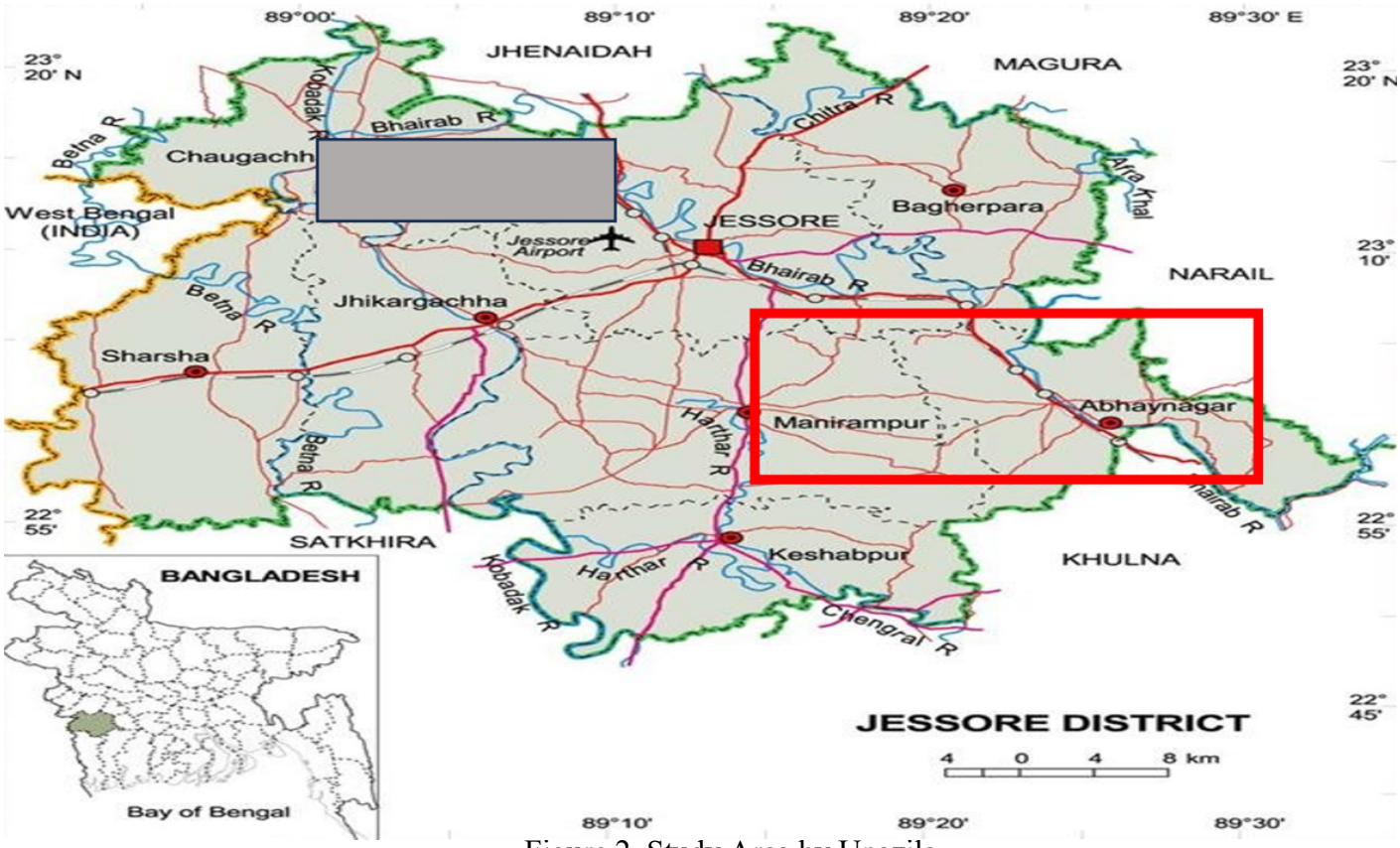

Figure 2. Study Area by Upazila

Sampling

The unit of analysis in this study was the waterlogged farmer. Farmers were selected following the below attributes, - i) farmers having at least 20 decimals of arable land ii) cultivable land undergoing water iii) Cropping was the sole source of income, even without any service members in the family. I conducted a household survey from December 15 to 28, 2022, to accurately determine the population size in the study area. To conduct this survey, the researcher and a research assistant went door-to-door to identify the population based on the above attributes. The Union Parishad (UP) and Agriculture Extension Office (AEO) did not maintain any lists of waterlogged farmers, so there were no alternative methods to determine the unit of analysis for this study. In some cases, aged farmers and, in some cases, local leaders of the respected areas helped the researcher do so. The study

employed a simple random sampling method. I selected 480 farmers as the sample after conducting the household survey and taking into account their attributes.

Data Collection

During the field survey, we interviewed farmers with the attributes mentioned earlier in the study area. The schedule contained both closed and open-ended questions. I prepared an interview schedule based on the study's objectives. It contained sociodemographic information in one section. the other section included their social participation and support during waterlogging. Though there are many other dimensions of social health, we consider only social participation and support in this study. Some of the faculty members of Khulna University and Rajshahi University (psychologists and sociologists) approved the face and content validity of the questionnaire. From February 24 to 28, 2023, I conducted a pretest on 29 farmers (more than 6% of the total sample) to test the reliability of the data. I randomly selected nine (9) farmers from the first two villages of the 12 villages. I selected two (2) farmers from each of the last 10 villages. We used Cronbach's alpha to test the reliability. I further developed the interview schedule based on the information from the pre-testing phase. The researcher and five experienced data collectors collected primary data from March to May 2023.

Data Measures

Social Health

Social participation and social support comprise social health. This social health scale is based on a 4-point Likert scale (not at all = 1, sometimes = 2, often = 3, all the time = 4). For a better understanding of the participants, I translated the social participation and social support scales into the Bengali version.

Social participation scale

Tan et al. (2009) and Levasseur et al. (2010) provided the relevant six items. For my study, I used a 4-point Likert scale instead of the 7-point one to evaluate the social activities of farmers in the community during waterlogging. Social participation includes six items (i.e., attending training, participating in political meetings, joining a religious congregation, watching TV, volunteering for social work, and solving social problems). This score ranges from 6 to 24. The scoring of the social participation scale includes 10≤ as low, 11–15 as medium, and 16≥ as high.

Social support scale

The Multidimensional Scale of Perceived Social Support (MSPSS) was developed, and the results showed that the tool was sound psychometrically (Zimet et al., 1990). The social support scale consists of several indicators of social integration (number of social ties) and the contact and quality of interaction with those social ties. Equivalent items are included in ELSA. Cohen (2004) and Uchino (2009) have drawn social support items from their respective studies. This scale includes four items: understanding how farmers feel, relying on others when faced with serious problems, opening up about worries, and facing criticism within the family. Questions were asked about family members. This section includes both positive and negative social support. This scale is based on a 4-point Likert scale (not at all=1, little=2, some=3, a lot=4). This scale ranges from 4 to 16. The scoring of the social support scale includes 7≤ as low, 8–11 as medium, and 12≥ as high.

Data Analysis

I processed the collected data and used both descriptive and inferential statistics to analyze and interpret them. I analyzed the data using SPSS 25.0 (IBM Corp.). I used percentages and mean rank to describe the aspects of social participation and support among waterlogged farmers. As the data in this study were not normally distributed (according to Kolmogorov-Smirnov and Shapiro-Wilk's test of normality, $p = 0.000$), a non-parametric test, i.e., the Mann-Whitney U test (for two groups), was executed to find out the significant differences between nuclear and joint families during waterlogging. I performed a multinomial logistic regression to assess the effect of family type on social participation and support. All relevant statistical tests were done at both significant levels ($p < 0.05$ and $p < 0.001$) with a 95% confidence interval.

Ethical Consideration

Before collecting data from farmers, I verbally obtained their consent for the study. I did not offer them any financial incentives, and I ensured their anonymity to protect the data's confidentiality and authenticity. I have confirmed that we will not use these data beyond the study's purpose, and we will strictly preserve matters related to psychosocial health.

Results

Family Type, Social Participation, and Social Support

Nearly 89% of the farmers lived in nuclear families (Table 2). During waterlogging, most of the farmers did not participate in any social activities. In addition, most of the farmers had a lot of social support during waterlogging.

A significant difference was also enumerated in the family type of the waterlogged farmers with participation in political meetings (U =13597.000, Z=-4.204, p<.001), participation in religious assembly (U =11773.500, Z=-5.376, p<.001), and watching television (U =12213.000, Z=-4.964, p<.001). Family type may influence social support. Different factors in both nuclear and joint families can have an impact on social health. However, sound social health reflects family members' social support. Farmers of joint families rather than nuclear families relied more on family members when having serious problems (z=-2.550).

Table 2. Waterlogged farmers by family type, social participation, and social support

Variables	n	%		
Family type				
Nuclear	388	80.8		
Joint	92	19.2		
Components of social participation	Frequency of social participation			
	Not at all=1	Sometimes=2	Often=3	All the time=4
Attended in training	290(60.4)	165(34.4)	17(3.5)	8(1.7)
Participation in political meetings	300(62.5)	166(34.6)	2(.4)	12(2.5)
Participation in religious talks	22(4.6)	188(39.2)	155(32.3)	115(24.0)
Watch television	45(9.4)	194(40.4)	133(27.7)	108(22.5)
Do any volunteer work	288(60.0)	161(33.5)	22(4.6)	9(1.9)
Participation in solving social problems	243(50.6)	181(37.7)	39(8.1)	17(3.5)
Components of social support	Degree of social support			
	Not at all=1	Some=2	Little =3	A lot=4
Understand the way you feel about things	-	8(1.7)	108(22.5)	364(75.8)
Reliance when having a serious problem	3 (.6)	18(3.8)	154(32.1)	305(63.5)

Open up about worries	1(.2)	46(9.6)	166(34.6)	267(55.6)
Face criticism	267(55.6)	113(23.5)	83(17.3)	17(3.5)

(Source: Fieldwork, 2023)

Social Health Scale and Family Type

Both scales are valid because the calculated value is greater than the table value (r >.098). The mean score of participation in religious talks and watching television in terms of social participation was 1.7±.86 and 1.6±.93, respectively (Table 3). In terms of social support, the mean score of understanding, reliance, and opening up about worries was 2.74±.47, 2.58±.59, and 2.45±.67, respectively. More than 50% of the farmers' social participation was medium, with a mean social participation of 11.41±2.78 and a 95% CI of 11.16–11.66. However, during waterlogging, 56% of farmers received significant social support from their family members. Their mean social support was 12.39±1.46, with a 95% CI of 12.26–12.52.

Social Participation and Social Support

Social health, comprising social participation and social support, has been measured with family type. 20 Social health may vary depending on the functions and members of the family. Social participation of the farmers of joint families was more compared to nuclear ones (z=-4.726). In addition, the social support of the joint family was more than that of nuclear families (z=-2.038) (See Table 4). A significant difference was also enumerated in the family type of the waterlogged farmers with participation in political meetings (U =13597.000, Z=-4.204, p<.001), participation in religious assembly (U 47 =11773.500, Z=-5.376, p<.001), and watching television (U =12213.000, Z=-4.964, p<.001). Family type may influence social support. Different factors in both nuclear and joint families can have an impact on social health. However, sound social health reflects family members' social support. Farmers of joint families rather than 3 nuclear families relied more on family members when having serious problems (z=-2.550).

Predicting social participation and social support

A multinomial logistic regression was performed to ascertain the effects of family type on the likelihood of social participation and support. The logistic regression model for social participation (See Table 5) was statistically significant, $\chi 2$ (2, N = 480) = 8.117, p = .017. The model explained 2.0% (Nagelkerke R2) of the variance in social participation. The nuclear family impacted farmers with lower social participation 2.25 times more than farmers with medium social participation (B=.814, CI, .955 to 5.329). On the other hand, the regression model for social support was not statistically significant, $\chi 2$ (2, N = 480) = 3.495, p = .174. The model explained only .09% (Nagelkerke R^2) of the variance in social support. In addition, the nuclear family impacted farmers with lower social support 2.81 times more than farmers with medium social support (B=1.03, CI, .325 to 22.395).

Table 3: Reliability statistics and scoring of social participation and social support scale

	Item Statistics				
Scale	M	SD	(α)	CI-TC	(α)
Social participation					
Attended in training	1.46	.64		.564	
Participation in political meetings	1.42	.63		.460	
Participation in religious talks	2.70	.86	.655	.320	.758[a]
Watch television	2.60	.93		.208	
Do any volunteer work	1.48	.67		.516	
Participation in solving social problems	1.64	.77		.366	
Social support					
Understand the way farmers feel	3.74	.47		.336	
Reliance when having a serious problem	3.58	.59	.370	.442	.732[b]

Open up about worries	3.45	.67		.361		
Face criticism	1.68	.88		-.212		
Scoring	N (%)		M±SD	IQR	Mini-Maxi	95% CI
Social participation						
Low (10≤)	203(42.3)					
Medium (11-15)	242(50.4)		11.41±2.78	4	6-22	11.16-
High (16≥)	35(7.3)					11.66
Social support						
Low (7≤)	11(2.3)					
Medium (8-11)	200(41.7)		12.39±1.46	1	6-16	12.26-
High (12≥)	269(56)					12.52

M-mean, SD-standard deviation, CI-TC- inter item-total correlation, IQR- interquartile range, CI-confidence interval

[a] when farmers' participation in religious talks and watching television are deleted, Cronbach's alpha becomes .758. [b] when 'face criticism' is deleted, Cronbach's alpha appears .732.

Table 4: Differences between farmers' family type and social participation, support

Scales	Family type (n-388/92)	MR	U test	Z	p
Social participation					
Training	Nuclear	237.08	16520.00	-1.29	.196
	Joint	254.93			
Political meetings	Nuclear	229.54	13597.00	-4.20	.000**
	Joint	286.71			
Religious talks	Nuclear	224.84	11773.50	-5.37	.000**
	Joint	306.53			
Watching television	Nuclear	225.98	122213.00	-4.96	.000**
	Joint	301.75			
Volunteer with institution	Nuclear	236.63	16344.500	-1.45	.146
	Joint	256.84			
Solving social problems	Nuclear	240.05	17674.000	-.161	.872
	Joint	242.39			
Social support					
Understandings	Nuclear	237.24	15682.000	-1.42	.154
	Joint	254.26			
Rely on family members	Nuclear	233.87	15277.000	-2.55	.011*
	Joint	268.45			
Open up about your worries	Nuclear	237.52	16692.000	-1.09	.276
	Joint	253.07			
Face criticism in the family	Nuclear	239.13	17316.000	-.494	.621
	Joint	246.28			
Social health					
Social participation	Nuclear	226.03	12232.000	-4.726	.000**
	Joint	301.54			
Social support	Nuclear	234.41	15485.500	-2.038	.042*
	Joint	266.18			

(Source: Field survey-2023). MR-mean rank, U test- Mann-Whitney U test *p<0.05** p<0.001

Table 5: Predictors of social participation and social support on family type

		Parameter estimates					
Parameter		B	Std. Error	p	OR	95% CI for OR	
						Lower Bound	Upper Bound
Social participation							
	Family type						
Low	Nuclear	.814	.439	.063	2.25	.955	5.329
	Joint [RC]	1					

Medium	Family type						
	Nuclear	.140	.416	.737	1.15	.509	2.597
	Joint [RC]	1					
Social support							
Low	Family type						
	Nuclear	1.03	1.059	.329	2.81	.325	22.395
	Joint [RC]	1					
Medium	Family type						
	Nuclear	.389	.243	.109	1.47	.917	2.374
	Joint [RC]	1					

RC-Reference Category (High), OR-odd ratio, *p<0.05** p<0.001

Discussion

Many factors, beyond family type, such as age, sex, and religion, influence participation in social activities. In our study, most of the waterlogged farmers did not participate in training, political meetings, volunteering with institutions, or solving social problems in the community. Ma et al., 2020 found that older individuals experienced a greater impact of social participation on their health. Because health status generally deteriorates with age. They watched television and joined religious assemblies. Frequently watching television is associated with increased risk for health vulnerability (Ekelund et al., 2016), but physical activity participation may attenuate or even eliminate the deleterious effect of watching TV (Ekelund et al., 2016; Rao et al., 2016; Marques et al., 2018). Disaster victims who attended training during the disaster were better able to manage their daily activities than those who did not (Motegi, 2019). Age, education, socioeconomic status, religion, and lifetime experiences of natural disasters were associated with volunteering following the disaster and affected social participation patterns (Lee et al., 2017; Chen & Xiao, 2022).

Farmers from joint families were more involved in political meetings, religious congregations, and television watching compared to nuclear families. A natural disaster affects persuasion and the mobilization of political choice (Mattila et al., 2017). Once again, a person's overall level of well-being, social networks, and life situation influence their political participation. Socioeconomic status strongly influences political engagement (Mattila et al., 2017), and a person's health deteriorates with lower socioeconomic status (Marmot, 2015). Socioeconomic factors influence political demonstrations during voting periods (Smith, 2024). There is a consistent relationship between family formation and various types of religious involvement and practice (Uecker et al., 2016; Smith, 2024). Uecker et al. (2016) found that the married nuclear family was more likely to engage in spiritual practice during a disaster. According to Smith et al. (2019), private religiosity may have a stronger tie to beliefs and values than marriage.

Family support plays an important role in promoting social soundness. In this study, most of the farmers' family members supported them in their understood ways, relying on them a lot with serious problems, and opening up about their worries. There was a significant relationship between stress and social support (Abdullah et al., 2015). Disaster exposure constitutes negative emotional states (Park et al., 2021). However, maladaptive responses to disasters cause depression and anxiety (Thapa et al., 2018). A lack of social support among people who have been exposed to disasters, such as floods and earthquakes (Kwon & Park, 2019) is associated with depression and anxiety. Furthermore, social support has protective effects on mental health conditions, such as depression, anxiety, and stress symptoms (Thapa et al., 2020). Additionally, research has reported a mediating effect of social support on the association between exposure to the economic repercussions of disaster and depression (Rung et al., 2017). The degree of exposure, community disruption, additional losses, and lack of support contribute to the negative psychological effects during and after a disaster (Shallcross et al., 2016). Improving social support, especially emotional support, among victims in disaster-affected communities

appears to be an important step in promoting the health and recovery of such communities (Inoue & Yamaoka, 2017). To them, going outdoors may be a behavior associated with obtaining social support and not associated with psychosocial distress or health problems.

Farmers of joint families, compared to those of nuclear families, relied more on family members during waterlogging. During disasters, farmers with joint families participated more in social activities, while farmers with nuclear families received more social support. In a crisis, the individual's ability to function optimally depends on external factors, such as support from immediate and extended family, a positive network of friends and neighbors, the availability of adequate employment opportunities, the ability to participate in spiritual and religious activities, the quality of social services available in the community, and effective governance. Farmers with nuclear families and low social participation were more severely impacted by disasters. In addition, the nuclear family impacted farmers with lower social support more than those with medium social support. Joint families and those with poor social support showed a higher prevalence of psychiatric morbidity (Chowhan et al., 2016). However, disaster creates feelings of strength and confidence, adjustment and acceptance, satisfaction, powerlessness, fear, guilt, shame, and loneliness (Hugelius et al., 2017).

Strengths and limitations

It was a door-to-door survey. So, it was possible to understand the different dimensions of the waterlogged farmers' social participation and support. To enumerate their social participation and social support, different types of Likert scales were used and thus, measured their social health during waterlogging. There were some limitations to the study. It was a quantitative study. Qualitative data would produce better insights into the study. However, the study should focus on a larger sample. This study does not accurately portray the social health of waterlogged farmers in Bangladesh. The scales did not encompass all the issues associated with the farmers' social health. The Cronbach's alpha of the social participation and social support scales was not good (<.70) in terms of reliability. Therefore, interpretations regarding social participation and social support may be inaccurate. Time bindings were one of the major constraints of the study.

Implications

Farmers should participate in training programs. This may refresh their minds. They can meet each other as part of the training program. This study found a meagre number of farmers to be involved in political participation. This participation might make them aware of their rights during disasters. When there is no alternative, the government's subsidy could be a crucial source of survival. Volunteering inspires the mind to be calm and happy. Some individuals may even experience a release from depression and anxiety. Solving social problems might be another source of self-satisfaction. Therefore, we should encourage farmers to participate in solving more social problems. Many farmers have experienced criticism from their families. The NGO can take various initiatives to develop family relations. Social support was high among the waterlogged farmers' families. However, social participation was moderate there. Therefore, authorities should increase the rate of social participation to improve the social health of farmers affected by flooding. Nuclear families should get the top priority for both social participation and social support. Social health was better for waterlogged farmers than social participation, as measured by social support. Farmers with low social participation and low social support. Therefore, we advocate for special measures to engage them in social activities and provide them with social support.

Conclusion

This study aimed to assess the impact of family type on their social health, particularly social participation and support. Most of the waterlogged farmers in this study did not participate in training, political meetings,

volunteering with institutions, or solving social problems in the community during disasters. However, they watched television and joined different types of religious assemblies. It is, of course, related to socioeconomic and demographic factors. Participants in those activities demonstrated better social health. Farmers from joint families participated more in political meetings, religious congregations, and television viewing. Consequently, they experienced less influence than their nuclear counterparts. Waterlogged farmers' family members supported farmers in their understood ways, relying upon them a lot with serious problems, and opening up about their worries. Farmers of joint families were more advanced in all these regards. Farmers with joint families participated more in social activities during disasters, while farmers with nuclear families received more social support. Disasters impacted farmers with lower social participation and support more severely. Future research should incorporate additional items into the scales used in this study to enhance their internal consistency and reliability. NGOs and GOs can effectively affect farmers' social participation and support during waterlogging.

Conflicts of Interest

The Author declares that there is no conflict of interest.

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