

# TMSS Medical College Journal (TMCJ)

Volume 25, Issue 02, July 2026

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**July 2026**

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of  
TMSS Medical College, Bogura, Bangladesh



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Volume 25, Issue. 02, July 2026

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# TMSS Medical College Journal (TMCJ)

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*Original Article***Knowledge Regarding Drowning among Rural People in a Selected Area of Joypurhat, Bangladesh**Zannat K<sup>1\*</sup>, Habib A<sup>2</sup>, Tasnim T<sup>3</sup>, Ansari AAM<sup>4</sup>, Hoque SMU<sup>5</sup>, Akter R<sup>6</sup>

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**\*Corresponding Author****Abstract**

**Background:** Drowning is one of the leading causes of death in Bangladesh and claims the lives of approximately 50 children per day. Rates of drowning are higher in rural populations, most likely due to high number of water sources in rural areas compared to urban areas. Proper knowledge can ease the mortality and morbidity of victims.

**Objective:** To assess the of knowledge regarding drowning among rural people in a selected area of Joypurhat, Bangladesh.

**Materials and Methods:** It was a descriptive type of Cross-sectional study conducted at Parulia and Keshobpur villages of Kalai, Joypurhat district on September, 2025. Purposive sampling technique was adopted for selecting respondent's  $\geq 18$  years of age from rural population. Sample size was 287. Data were collected by face-to-face interview. A pre-designed, pre-tested, structured questionnaire was used, as a tool for collecting data. Ethical issues were maintained strictly at every stages of the study.

**Results:** The study revealed that, out of 287 respondents majority (26.83%) belonged to the age group below or equal to 30 years. In this study about 60% were female, around 51.57% were housewife and 26.1% had no formal education. Majority (84%) respondents live near water bodies. About 15% mentioned that their family member were experienced drowning in the past. 97% of the children were most vulnerable to drowning and 86% mentioned that drowning mostly occur during moonsoon season. Regarding preventive measure, 44.84% said that it is necessary to keep children away from water bodies, 29.26% mentioned everybody should learn how to swim. In regard to first aid knowledge 71% said that they should jump into water to save drowning victim, 45% said to call for help and 3% don't know how to rescue a drowning victim. After rescuing a drowning victim, 72% of participants said that they should press stomach, 58% preferred hospital treatment and 0.3% did not what to do. Only 17% of respondents said they taken any health education or training on drowning and 68% mentioned that they need to more information on this topic. Study findings signify the need for further awareness programs for rural residents to educate them on this neglected yet preventable public health emergency.

**Conclusion:** Still now rural people has little knowledge along with some misconceptions regarding this issue and necessary steps should be taken by the concerned authority to enhance appropriate treatment-seeking behavior highlighting the need for targeted public health interventions.

**Keywords:** General knowledge, Drowning, Rural people, Prevention, First Aid.

**Introduction**

The third most common cause of unintentional injury deaths globally is drowning. The most vulnerable groups to drowning include men, children, and those with greater access to water. With an expected 236,000 drowning deaths in 2019, drowning is a significant global public health issue.<sup>1</sup> Around 300,000 drowning deaths occur each year, according to the WHO in 2024, making it a significant global public health issue. In

2017, drowning claimed the lives of about 110,000 individuals in Commonwealth nations.<sup>2</sup> Over half of all drowning deaths worldwide occur in the Western Pacific and South-East Asia regions. In 2021, drowning injuries accounted for almost 8% of all deaths globally. Children and young people are disproportionately affected by drowning. Nearly 25% of drowning deaths occur in children under the age of

five. For children between the ages of one and four, drowning is the fourth most common cause of death; for children between the ages of five and fourteen, it ranks third. Low- and middle-income nations account for 92% of drowning deaths.<sup>3</sup> In Bangladesh, drowning is one of the most common causes of death, taking the lives of about 43 children every day. Because there are more water sources in rural areas than in urban ones, drowning rates are higher in rural communities.<sup>1</sup> According to the 2016 Bangladesh Health and Injury Survey (BHIS), drowning is the primary cause of mortality for children aged 0 to 17; at least 14,438 children perish from drowning each year.<sup>4</sup> According to a recent poll, 83% of drowning victims were youngsters between January 2020 and June 2021. According to data released by UNICEF and the National Institute of Population Research and Training, two-fifths (42%) of all children in Bangladesh between the ages of one and four died from drowning in 2011. Interestingly, children between the ages of 0 and 4 are almost three times more likely to drown than children between the ages of 10 and 17. The risk of drowning is significantly higher in rural children.<sup>5,6</sup>

Children in low- and middle-income nations are six times more likely to drown to death than children in high-income countries, and multiple studies indicate that youngsters between the ages of one and four are most at danger. In Bangladesh, drowning is a serious public health issue that poses a serious risk to children's survival. According to a nationwide survey, 80% of drownings in children under five occurred within 20 meters of the family home, mostly in ponds, followed by trenches and water containers.<sup>7</sup>

Though drowning is a serious public health issue, it has not received the same attention as other significant causes of infant death.

In rural people, traditional first aid and resuscitation responses to drowning are very poor. However, the common practices on management of drowning in the community is not well documented in Bangladesh. In

Bangladesh, as in other developing countries, sociodemographic and economic factors may influence child drowning, but the evidence is insufficient. Understanding these various risk variables is vital for developing effective preventative programs. Against this backdrop, this study explored an in-depth understanding of surrounding circumstances and associated factors of each drowning child fatality occurring in Bangladesh. In addition, this paper seeks to fill the knowledge gap on drowning deaths in prior research and provide updates on related factors for child drowning fatalities in Bangladesh.

This study aims to assess the knowledge of rural populations in a selected area of Joypurhat regarding and drowning, focusing on prevention, first aid, and treatment-seeking behaviors. The findings will be helpful for further public health interventions.

## Materials and Methods

This descriptive type of cross-sectional study was conducted among rural people at Parulia and Keshobpur villages of Kalai, Joypurhat district from June to September, 2025. The study population was rural people of more than 18 years of age in the selected area irrespective of gender. Purposive sampling technique was used for selecting (287) sample. A pre-designed, pre-tested, structured questionnaire was used, as a tool for collecting data. The questionnaire consisted of 3(three) separate sections as Socio demographic profile, Knowledge regarding drowning and Sources of Information. 4th year MBBS students of TMSS Medical College, Bogura collected data by face to face interview under the supervision of Community Medicine and Public Health Department. All participants were briefed about the process of data collection and assured about confidentiality of data. It was also emphasized that their participation was voluntary, and they have the right to withdraw at any stage throughout the research. The collected questionnaires were checked for cleaned, edited, coded, and analyzed manually. Only descriptive study was done and results were expressed as frequency and percentage and displayed in tables and figures.

## Results

**Table I: Distribution of the Respondents based on Socio-demographic Variables (n=287 )**

| Variables                         | Frequency | Percentage (%) |
|-----------------------------------|-----------|----------------|
| <b>Age (years)</b>                |           |                |
| ≤30                               | 77        | 26.84          |
| 31-40                             | 64        | 22.24          |
| 41-50                             | 47        | 16.39          |
| 51-60                             | 50        | 17.43          |
| >60                               | 49        | 17.10          |
| <b>Gender</b>                     |           |                |
| Female                            | 173       | 60             |
| Male                              | 114       | 40             |
| <b>Religion</b>                   |           |                |
| Muslim                            | 171       | 59             |
| Hindu                             | 116       | 41             |
| <b>Educational qualification.</b> |           |                |
| No formal education               | 75        | 26.1           |
| Primary                           | 53        | 18.5           |
| Secondary                         | 39        | 13.6           |
| SSC                               | 54        | 18.8           |
| HSC                               | 50        | 17.4           |
| Others                            | 16        | 5.6            |
| Total                             | 287       | 100            |

Table-I: shows that out of 287 respondents, 26.84% of respondents were below 30 years of age, 60% of respondents were female and 59% of the respondents were muslim. 26.1% of respondents had no formal education.

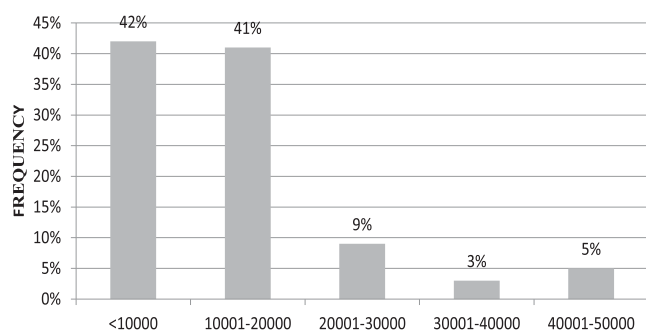


**Figure 1: Distribution of the Respondents according to Monthly Family Income. n=287**

DOI: <https://doi.org/10.62948/tmcj.2026.2502.02>

Figure 1: shows that 42% of respondents had family income less than 10,000 taka and 3% respondents had monthly family income between 30,001- 40,000 taka.



**Figure 2: Distribution of the Respondents according to Living Place Near Water Bodies. n=287**

Figure 2 : shows that 84% of respondents said they live near water bodies and 16% said that don't live near any water bodies.

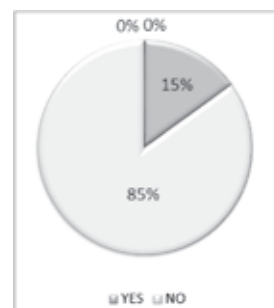


**Figure 3: Distribution of the Respondents according to Experience of Household Members Drowning. n=287**

Figure 3 shows that 85% of respondents never experienced drowning and 15% respondents had experience drowning in their family.

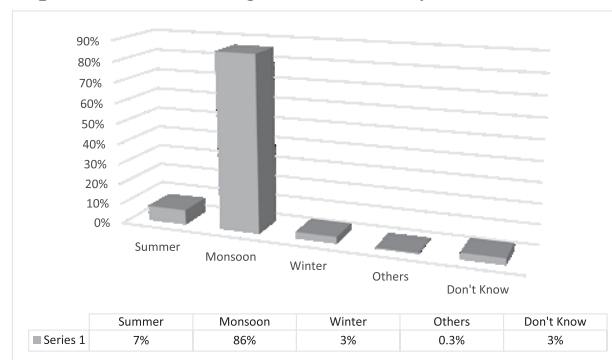


**Figure 4: Distribution of the Respondents according to Knowledge Regarding Season of Drowning. n=287**

Figure 4: mentioned that 86% of the respondents said drowning occur mostly in monsoon season.

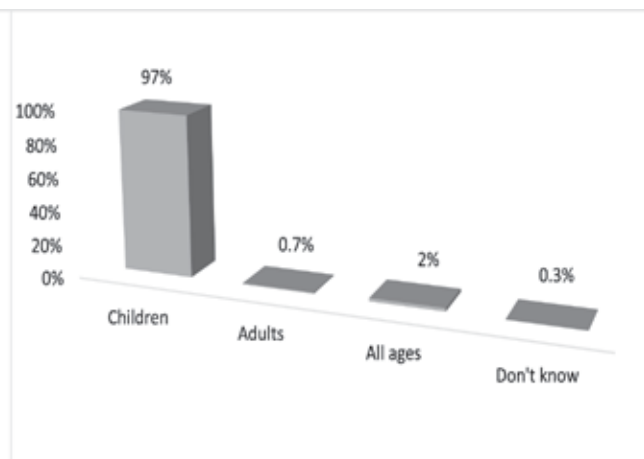


**Figure 5: Distribution of the Respondents according to Knowledge of most Vulnerable Group of Drowning. n=287**

Figure 5: revealed that, 97% of the respondents said children are most vulnerable to drowning.

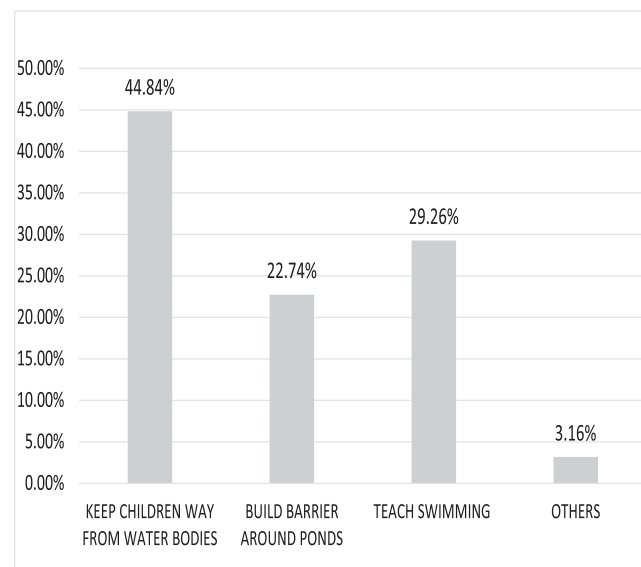


**Figure 6: Distribution of the Respondents according to Preventive Knowledge of Drowning. n=287**

Figure 6: Revealed that 44.84% respondents said that it is necessary to prevent drowning by keeping children away from water bodies and 29.26% of respondents said they should teach swimming.

**Table II: Distribution of the Respondents according to Action for Rescuing a Drowning Victim. n=287**

| Variable                     | Frequency | Percentage (%) |
|------------------------------|-----------|----------------|
| Call for help                | 130       | 45             |
| Jump into water to save them | 205       | 71             |
| Use a stick/ rope to help    | 44        | 15             |
| Don't know                   | 1         | 3              |
| ❖ Multiple answer            |           |                |

Table II: showed that 71% respondents said they must jump into water to save drowning victim, 45% respondent said that they should call for help and 3% don't know what to do.

| Variable                 | Frequency | Percentage (%) |
|--------------------------|-----------|----------------|
| Take to Hospital         | 167       | 58             |
| Press their stomach      | 208       | 72             |
| Lay them sideways        | 20        | 7              |
| Wait for them to recover | 10        | 3              |
| Don't know               | 1         | 0.3            |
| ❖ Multiple answer        |           |                |

**Table III: Distribution of the Respondents according to Immediate Action after Drowning. n=287**

Table III: showed that, 72% respondents were mentioned 'press stomach' as immediate action after drowning. Then other responses are 'take the victim to hospital' (58%) and 0.3% said they didn't know about that.

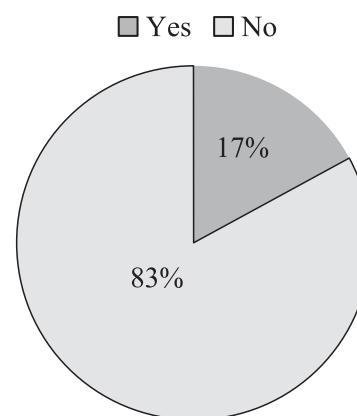


**Figure 7: Distribution of the Respondents according to Take any Health Education or Training on Drowning. n=287**

Figure 7: showed that maximum 83% of respondents said they did not take any health education or training on drowning.

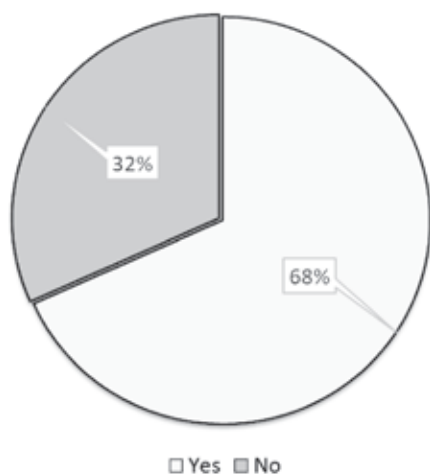


**Figure 8 : Distribution of the Respondents according to Need for More Information on This Topic.(n=287)**

Figure 8: Showed 68% of respondents need more information on this topic.

## Discussion

Study reveals that the highest age group of respondents were below or equal to 30 years of age (26.84%), Females accounted for 60% of the study subjects where 51.57% were housewife. 26.1% of respondents had no formal education. This inconsistency may be due to the fact that in this study purposive sampling was done in rural area and also for time of data collection when most of male go for work. Most (59%) of the respondents were Muslims and rest were hindu. This Finding of the study is consistent with the national data of Bangladesh.

The data showed that only a small proportion of respondents (15%) had experience drowning in their family. This low prevalence of direct experience could potentially contribute to a lack of perceived risk and insufficient knowledge about prevention.

The study also assessed knowledge regarding most vulnerable group of drowning that is children 97%,

which is another significant public health concern. Most of the respondents (79.5%) in Parbatipur study expressed that children less than six years are more vulnerable to drowning.<sup>7</sup> In this study, majority of respondents 86 % were aware that the monsoon season is when drowning is most common same. This seasonal awareness is positive, as it aligns with peak risks during floods and high-water levels. However, awareness of the vulnerable age for drowning was specific. While more detailed knowledge regarding the most critical age group (often children under five) is vital for targeted interventions like community-based supervised child-care.

In this study regarding action for rescuing a drowning victim 71 % respondents said jump into water to save them and only 15 % said use a stick or rope to help. But against that, saying it's safer to throw a lifesaving device, towel, rope or even a pool noodle to the person in the water, wait until the person grabs hold and then tow the person to safety. In this another study regarding first response on drowning 62.0% mentioned of seeking for help by calling or shouting to seek help in rescuing a drowning person and 34.3% mentioned of throwing a flotation device or giving an extension to save the drowning person.<sup>8</sup>

Regarding rescue and first aid for a drowning victim, only 58% of respondents reported that the first step is 'taking to the hospital'. The most common first action reported was "press the stomach" 72%. In another survey conducted on responses to drowning victims, it was found that 68.3% of participants mentioned the application of pressure on the belly to expel water, while 31.4% recommended immediate referral to a hospital.<sup>1</sup> According to the Health & Safety Institute, Performing CPR with rescue breaths on a drowning victim is crucial element of emergency preparedness, serving as a vital safeguard that, if administered correctly, has the potential to save lives.<sup>9</sup> Although getting to the hospital is important, the low knowledge of immediate life-saving first-aid measures like Cardiopulmonary Resuscitation (CPR) or mouth-to-mouth ventilation in the critical moments after rescue is alarming. Effective first-aid knowledge is critical for improving survival rates, particularly in

rural settings where emergency medical services are often delayed.

According to preventive knowledge of drowning, in this study revealed that 44.84% respondents said that it is necessary to prevent drowning by keeping children away from water bodies, 29.26% said they should teach swimming and only 22.74% said build barrier around ponds. In another study revealed that 93% of the respondents said that adult supervision is the best way to prevent drowning among children. About 65% of the parents agreed to letting their children attend swimming lessons. When asked to specify measures to prevent drowning 33% said that place barrier or fence around water bodies and only 7.2% said do not allowed to go near water bodies.

In our study 83 % respondents said they had not received any health education or training on drowning. In other study said that more than 93% of the parents have not participated in any program or activity on drowning prevention.<sup>10</sup>

Nonetheless, substantial majority 7% of the respondents of our study expressed school is the main source of receiving health education or training on drowning and 68% of respondents interested to getting more information about drowning. Present study exposed that till now a major number of rural people do not have right knowledge regarding prevention and appropriate first aid after drowning incidence. Respondent's willingness and expressed need for further knowledge present a clear opportunity for local health authorities to implement effective, targeted health education programs.

## Conclusion

It was important to assess the current knowledge and identify the preventive knowledge gap on drowning and first aid management with the aim to frame future awareness programs for the rural community to prevent further mortality and morbidity resulting from drowning. Our study findings would be a baseline data hopefully for further in depth large scale study. By enhancing community knowledge regarding this negligible issue can change remarkable preventive data in future.

## Limitation and recommendations

1. The small study population from selected villages was identified as the main limitation of the study, meaning that the study findings cannot be generalised.
2. Local health sectors should coordinate for implementing health education programs about this public health emergency.
3. The results obtained in this study could be used to guide strategic planning for Health sectors of Bangladesh. .
4. It could be a wise idea to conduct large scale research.

## Ethical Considerations

The project was approved by Community Medicine and Public Health department of TMSS Medical College, Bogura for Residential Field Site Training (RFST) programme. The concerned authorities were informed and took permission for data collection with formal letters by the Head of Department of Community Medicine and the Principal of TMSS Medical College, Bogura, Bangladesh. All the respondents were briefed about the purpose and procedure of data collection.

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**Conflict of Interest-** The authors confirm that there is no conflict of interest among the authors.

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