



Health-seeking Behaviors of Caregivers following Non-fatal Injuries in Rural Children at a Sub-district of Bangladesh, 2018

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Abstract

Objectives: Understanding health-seeking behaviors of caregivers following non-fatal child injuries is necessary for child-injury prevention programs to develop effective interventions. This cross-sectional study aims to provide evidence on health-seeking practices in Bangladesh.

Methods: Data were previously collected in a survey study conducted between May and June 2018 among children aged less than 18 years from a selected sub-district of Bangladesh. Cluster sampling identified mothers or caregivers to be interviewed using a pretested semi-structured questionnaire. Health-seeking responses, including first aid and subsequent treatments, were obtained only for injured children, categorized as 'minor' and 'major'.

Results: Of 918 children, the prevalence of major (n=22) and minor (n=68) injuries was 2.4% and 7.4%, respectively. All but one child received first aid or other forms of treatment. Among those who had major injuries, 77% received first aid, mostly from relatives (47%) or a doctor/trained health care worker (HCW) (41%); further treatment was pursued for 64%, and 18% were hospitalized. Among those with minor injuries, 90% received first aid, primarily from a relative (54%) or an unqualified HCW (25.5%); 60% sought further treatment, and 3% were hospitalized. Unqualified HCWs continued treatment for 50% of those with major and 71% of those with minor injuries. Caregivers applied diverse substances such as oil, water, toothpaste, ointment, or leaves as first aid, regardless of injury type and pattern.

Public Health Recommendations: This study identified nearly similar first aid practices as seen earlier, with treatment adherence more towards non-qualified HCWs. Inclusion of first aid knowledge and health-seeking behaviors in prevention programs, and qualitative studies for understanding of treatment adherence behavior are recommended.

Keywords: child injury, health-seeking behavior, caregivers

Introduction

Injury, a major global health issue, accounts for 6.4% of all deaths and 8.6% of disability-adjusted life years (DALYs) for all ages. Among people aged below 20 years, injuries contribute to 10.7% of all deaths and 8.5% of DALYs, with over 1,600 daily deaths due to unintentional injuries in those under 19 years of age.^{1,2} Road traffic injuries, homicide, and suicide are among

the top five causes of mortality among those aged 5–29 years.³ Injuries disproportionately affect younger individuals, males, and those with low socioeconomic status.^{2–4} Children in low- and middle-income countries (LMIC) experience fivefold higher mortality and eight times higher risk of unintentional injuries than high-income countries.^{2,5,6} In Bangladesh, an LMIC, child injury rates are particularly high, with drowning (25.7



per 100,000) and suicide (16.8 per 100,000) being the two leading causes of mortality.^{7,8} Moreover, injury rates are higher in rural areas compared to urban setting.⁹

Childhood injuries, including falls, cuts, burns, blunt trauma, animal bites, and near-drowning, pose a significant public health burden. While major injuries require immediate medical attention and may have long-term consequences, minor injuries, can also lead to significant health issues if inadequately managed.^{3,10} Homes are common sites of childhood injuries, and caregivers often play a critical role as first responders providing immediate care or deciding for professional medical attention. Understanding caregivers' health-seeking behaviors, especially in rural areas, is crucial for improving both physical and psychological outcomes among injured children.^{10–13}

Despite its importance, up-to-date research on health-seeking behaviors for childhood injuries in Bangladesh remains limited since the 2003 national health and injury survey, with few studies examining fatal injuries across urban and rural settings.^{14,15} The need to examine current practices, identify any shifts over time, and explore the role of caregivers is vital for informing interventions aimed at improving child injury outcomes. This study addresses this gap by describing caregivers' health-seeking behaviors for children with non-fatal major and minor injuries in a rural sub-district of Bangladesh in 2018.

Methods

This cross-sectional study, which was part of a child injury prevalence survey, was conducted at a Bangladeshi sub-district (Belabo, Narsingdi), chosen earlier for the surveillance of community based non-communicable diseases.¹⁶ Belabo is located 80 kilometers northeast of the capital, and contained eight unions and 100 villages in 2011, a government-owned 31-bed upazila health complex, seven union health centers, one union health sub-center, seven union health and family welfare centers, several community clinics, and many private chambers and hospitals.^{17,18}

Data were collected from children aged less than 18 years, who resided in this rural community for the last six months, during May–June 2018 using a pre-tested semi-structured questionnaire. Mothers were the preferred respondents, and in their absence, caregivers were interviewed instead.

For the prevalence survey, the formula $n = \frac{z^2 \times pq}{d^2}$, a prevalence of 12% injuries in general, a precision of 3%, a design effect of 2, and a response rate of 90% were used to calculate sample size.⁸ Cluster sampling

techniques were applied and a village was a cluster. Villages were selected randomly from village-lists available for each union, which showed variability in total number of villages under unions. However, total or list of households, and populations for each village were unavailable rendering deployment of probability proportional to size sampling unfeasible. Therefore, to ensure better representativeness, 25% villages from each union and total 25 villages from all unions were selected. The total sample size was equally distributed among all selected villages, and hence, a total of 41 households were selected from individual village. For each village, we identified a landmark, then span a pen to select a random direction, along which we started recruitment of eligible participant from the first household. One child was randomly chosen per household. Similarly, all households situated serially were recruited until the sample size, as calculated for every village, was reached.

As health-seeking behaviors are recall-dependent, collecting injury data from recently non-injured children might compromise the data validity. Therefore, to maximize validity for this study, any non-fatally injured child, if identified from the pool of participating children from the original survey, was included, and his/her caregiver was queried for further health-seeking information.

Data collected included the selected child's socio-demographic characteristics. For children with an injury, the pattern of injury, health-seeking behaviors, such as application of first aid, person providing it, details of treatment-seeking afterwards, its continuation, hospitalization, and outcome at time of data collection were also recorded. First aid practices were summarized according to the injury pattern. Overall health-seeking behavior after having any injury was descriptively analyzed using STATA version 14.2 (College Station, TX, USA). We did not adjust for sampling weights considering qualitative nature of health-seeking behavior and absence of necessary household level data.

We categorized injuries as 'major' or 'minor' based on number of days it hampered regular activities as reported in previous studies.^{19–21} To ensure focused recall, an injury was considered 'minor' if it occurred in the previous three months and hampered regular activities for less than 30 days; and 'major' if it occurred in the previous 12 months and hampered regular activities for at least 30 days.²² A 'caregiver' was any person in the family who provided the child with day-to-day care. 'Health-seeking behavior' was defined as any treatment sought by the caregiver, including first

aid or medical intervention from either a trained or unqualified health care worker (HCW).²³ 'First aid' referred to emergency care or treatment provided before regular medical aid could be obtained.²⁴ We labelled a doctor with a degree of Bachelor of Medicine and Bachelor of Surgery or with specialization in a particular field or trained government HCWs as a 'doctor/trained HCW', and a pharmacy person or village doctor or traditional healer as an 'unqualified HCW'.

Results

The socio-demographic characteristics and injury prevalence of the children have been described in a previous publication.¹⁶ Briefly, we visited 1,025 households and there was a non-response rate of 9%. In 90% of responding households, mothers of selected

children served as respondents. We surveyed 918 children, who had mean (standard deviation (SD)) age of 8.0 (5.0) years, with 29% were aged 5–9 years and nearly equal sex distribution. For children having major injuries, mean (SD) age was 7.3 (4.5) years, 82% were male, 59% of mothers were aged 30 years or younger, and 82% of mothers had an educational level of secondary or above, and 90.5% of households had a monthly expenditure of 20,000 Bangladeshi Taka (BDT) or less (236 US dollar (USD)), based on the average 2018 exchange rate (1 BDT=0.0118 USD). For children with minor injuries, mean (SD) age was 7.6 (5.1) years, 60% were male, mother's age and level of education were distributed almost equally across groups, and 79% households had a monthly expenditure of 20,000 BDT or less (236 USD) (Table 1).

Table 1. Socio-demographic characteristics of children with major and minor injuries.

Sociodemographic characteristic	Category	Total		Major injury (n=22)	Minor injury (n=68)
		n	%	n (%)	n (%)
Age (years) (n=915)	<1	45	4.9	0	0
	1–4	235	25.7	7 (31.8)	24 (35.3)
	5–9	268	29.3	10 (45.5)	22 (32.4)
	10–14	249	27.2	3 (13.6)	11 (16.2)
	15–17	118	12.9	2 (9.1)	11 (16.2)
Gender (n=917)	Female	458	49.9	4 (18.2)	27 (39.7)
	Male	459	50.1	18 (81.8)	41 (60.3)
Birth order (n=918)	≤2	629	68.5	12 (54.5)	41 (60.3)
	>2	289	31.5	10 (45.5)	27 (39.7)
Father's age (years) (n=888)	≤40	576	64.9	15 (68.2)	36 (56.3)*
	>40	312	35.1	7 (31.8)	28 (43.7)*
Father's education (n=890)	Primary or below	506	56.9	13 (59.1)	39 (60.9)*
	Secondary or above	384	43.1	9 (40.9)	25 (39.1)*
Father's occupation (n=890)	Farmer	248	27.9	8 (36.4)	18 (28.1)*
	Businessman	205	23.0	4 (18.2)	15 (23.4)*
	Other	437	49.1	10 (45.5)	31 (48.4)*
Mother's age (years) (n=900)	≤30	478	53.1	13 (59.1)	32 (49.2)*
	>30	422	46.9	9 (40.9)	33 (50.8)*
Mother's education (n=911)	Primary or below	411	45.1	4 (18.2)	34 (50.0)
	Secondary or above	500	54.9	18 (81.8)	34 (50.0)
Mother's occupation (n=911)	Housewife	828	90.9	22 (100.0)	60 (88.2)
	Other	83	9.1	-	8 (11.8)
Household members (n=918)	≤5	659	71.8	14 (63.6)	49 (72.1)
	>5	259	28.2	8 (36.4)	19 (27.9)
Total children in household (n=918)	<3	668	72.8	13 (59.1)	49 (72.1)
	≥3	250	27.2	9 (40.9)	19 (27.9)
Number of existing siblings (n=917)	<3	723	78.8	18 (81.8)	54 (79.4)
	≥3	194	21.2	4 (18.2)	14 (20.6)
Living status of child (n=915)	With only father	8	0.9	1 (4.6)	-
	With only mother	157	17.1	3 (13.6)	10 (14.7)
	With both mother and father	710	77.7	17 (77.3)	54 (79.4)
	With others	40	4.3	1 (4.6)	4 (5.8)
Monthly expenditure (BDT) (n=904)	≤10,000 BDT (118 USD) [†]	235	26.0	9 (42.9)	14 (20.6)
	10,001–20,000 BDT (118.01-236 USD) [†]	546	60.4	10 (47.6)	40 (58.8)
	≥20,001 BDT (236.01 USD) [†]	123	13.6	2 (9.5)	14 (20.6)

*Percentages were calculated excluding missing data. [†]Currency conversion was based on the average 2018 exchange rate (1 BDT=0.0118 USD).

Twenty-two children experienced major injuries (prevalence 2.4%, 95% CI 1.5–3.6), and 68 experienced minor injuries (7.4%, 95% CI 5.8–9.3). Two children had both major and minor injuries. Injuries from falls were the most common for both types. Around 77% children with major, while 90% children with minor injuries received first aid. However, two children with major and three with minor fall injuries did not receive any first aid. One female child with illiterate parents, household expenditure of 10,000 BDT or less (118 USD), and

greater than five family members, sustained a minor transport injury but received no treatment for five days.

First aid practices varied by pattern of injury (Table 2). Among the 75 children receiving first aid, falls were the most common type of injury (36%), followed by cuts (21%), burns (15%), transport injuries (12%), blunt injuries (11%), animal-related injuries (4%), and near drownings (1.3%). Post injury, 20% of children were taken to a doctor/trained HCW and 13% to an unqualified HCW (Table 2).

Table 2. First aid practice of immediate care provider after occurrence of a particular type of injury in a child.

Pattern of injury	Major injury (n=16) n (%)	Minor injury (n=59) n (%)	Total (N=75) n (%)	First aid practice of immediate care provider	
				Practice	n (%)
Falls	5 (31.3)	22 (37.3)	27 (36.0)	Used various substances without massage (oil/water/ointment/leaves)	10 (37.0)
				Visited a doctor/trained HCW	6 (22.2)
				Massage with various substances (oil/water/kerosene/ointment)	4 (14.8)
				Visited an unqualified HCW (traditional healer)	3 (11.1)
				Used wet cloth to cover injured part	2 (7.4)
				Used antiseptic	1 (3.7)
				Unknown	1 (3.7)
Cuts	5 (31.3)	11 (18.6)	16 (21.3)	Used various substances (toothpaste/wet cloth/non-specific ointment) over the affected area	5 (31.3)
				Visited an unqualified HCW (pharmacy/village doctor)	4 (25.0)
				Visited a doctor/trained HCW	3 (18.8)
				Used antiseptic creams	3 (18.8)
				Unknown	1 (6.3)
Burns	2 (12.5)	9 (15.3)	11 (14.7)	Used various substances (engine oil/coconut oil/toothpaste) over the affected area	4 (36.4)
				Visited an unqualified HCW (pharmacy/village doctor)	2 (18.2)
				Used iced water	2 (18.2)
				Washed with running water	1 (9.1)
				Used non-specific home remedy	1 (9.1)
				Unknown	1 (9.1)
Transport injuries	2 (12.5)	7 (11.9)	9 (12.0)	Visited a doctor/trained HCW	4 (44.4)
				Used antiseptic	2 (22.2)
				Applied bandage	1 (11.1)
				Unknown	2 (22.2)
Blunt injuries	2 (12.5)	6 (10.2)	8 (10.7)	Used various substances (water/wet cloth/non-specific ointment/coconut oil) over the affected area	5 (62.5)
				Visited a doctor/trained HCW	1 (12.5)
				Visited an unqualified HCW (pharmacy)	1 (12.5)
				Used antiseptic creams	1 (12.5)
Animal-related injuries	0	3 (5.1)	3 (4.0)	Used various substances (lime, holistically treated salt) over the affected area	2 (66.7)
				Visited a doctor/trained HCW	1 (33.3)
Near drownings	0	1 (1.7)	1 (1.3)	Twirled child overhead	1 (100.0)

HCW: health care worker.

After a child experienced a fall (n=27), substances such as oil, water, ointment, and leaves were applied over the injured areas, either with (15%) or without (37%) massage; caregivers used wet cloth (7%) and brought 22%

children to a doctor/trained HCW. Besides using several stuffs including wet cloth (31%) over the cut injury surface (n=5), antiseptic creams were applied to 19% (n=3). For burns (n=11), burnt area was washed with

running water in one child, whereas 64% were treated with various substances (i.e., engine oil, coconut oil, or toothpaste), iced water, or non-specific home remedies. Following transport injuries (n=9), the child was mainly brought to a doctor/trained HCW (44%). The commonest approach after blunt and animal-related injuries was applying different substances over the affected area. In the only recorded event of near drownings, the child was twirled overhead (Table 2).

Among injured children, 17 with major injuries and 61 with minor injuries received first aid measures. In most cases, the initial treatment or care was administered by relatives of the injured child (47%, n=8 for major injuries and 54%, n=32 for minor injuries). For children with major injuries, 41% were first treated by a doctor/trained HCW, whereas for minor injuries, 26% by an unqualified HCW.

Practices after getting first aid measures for both major and minor injuries were shown in Table 3. When

it was provided by a doctor/trained HCW (n=7) after a major child injury, 43% of caregivers sought additional treatment from a specialist doctor, unqualified HCW, or both. When a relative (n=7) provided first aid after a major child injury, 72% sought additional treatment from either a doctor or traditional healer, or from multiple sources, including a village doctor. However, no additional treatment was sought when a pharmacy or traditional healer (n=2) provided first aid. For minor child injuries, when first aid measures were given by a doctor/trained HCW (n=9), 22% of caregivers sought additional treatment from other doctors. When a relative or other (n=35) provided it, 71% sought additional treatment from a qualified doctor, a traditional healer, a village doctor, a pharmacy, or multiple sources. Four children received first aid from a traditional healer, of whom two subsequently visited a pharmacy. However, when a village doctor (n=4) or pharmacy person (n=7) gave it, no additional treatment was sought.

Table 3. Sequelae of health-seeking behavior of children after receiving an injury.

	Attribute	Major injuries n (%)	Minor injuries n (%)
First aid measures	Yes	17 (77.3)	61 (89.7)
	No	2 (9.1)	4 (5.9)
	Don't know	3 (13.6)	3 (4.4)
	Total	22 (100.0)	68 (100.0)
Type of first aid care provider	Relatives	8 (47.1)	32 (54.2)
	Doctor/trained HCW	7 (41.2)	9 (15.3)
	Traditional healer/village doctor	1 (5.9)	8 (13.6)
	Pharmacy	1 (5.9)	7 (11.9)
	Other	0 (0.0)	3 (5.1)
	Total	17 (100.0)	59 (100.0)
Practices after getting first aid measures from a doctor/trained HCW	Sought treatment from a specialist/other doctor	1 (14.3)	2 (22.2)
	Sought treatment from an unqualified HCW	1 (14.3)	0 (0.0)
	Sought treatment from both	1 (14.3)	0 (0.0)
	No other treatment	4 (57.1)	7 (77.8)
	Total	7 (100.0)	9 (100.0)
Practice after getting first aid measures from relatives/others	Sought treatment from a qualified doctor	1 (14.3)	4 (11.4)
	Sought treatment from a traditional healer	2 (28.6)	4 (11.4)
	Sought treatment from a village doctor	0 (0.0)	4 (11.4)
	Sought treatment from a pharmacy	0 (0.0)	11 (31.4)
	Sought treatment from multiple sources	2 (28.6)	2 (5.7)
	No other treatment	2 (28.6)	10 (28.6)
	Total	7 (100.0)	35 (100.0)
Other treatment apart from first aid measures	Yes	14 (63.6)	41 (60.3)
	No	8 (36.4)	27 (39.7)
	Total	22 (100.0)	68 (100.0)
Requirement of hospitalization	Yes	4 (18.2)	2 (2.9)
	No	18 (81.8)	66 (97.0)
	Total	22 (100.0)	68 (100.0)
Duration of illness (days)	Median (IQR)	35 (30–75)	7 (4–15)
Outcome	Recovery	22 (100.0)	68 (100.0)
	Total	22 (100.0)	68 (100.0)

HCW: health care worker. IQR: Interquartile range.

Approximately 18% (n=4) of children with a major and 3% (n=2) with a minor injury required hospitalization. The median (interquartile range) duration of illnesses was 35 (30–75) and 7 (4–15) days after major and minor injuries respectively. All children were in a recovered state when data were collected (Table 3).

Caregivers consulted multiple HCWs for treatment after five children had major and six had minor injuries. Complete treatment continuation behavior after injuries was described in Figure 1. Among children with major injuries (n=16), eight followed treatments provided by a doctor/trained HCW and eight by an unqualified HCW. For those with minor injuries (n=49), 71% adhered exclusively to treatment provided

by an unqualified HCW. On bivariate analysis, among children with major injuries, all mothers (n=3) with educational levels of primary or below, 38.5% (n=5) mothers with a secondary level of education or above, and 67% (n=8) mothers living in a household with a monthly expense of 15,000 BDT or less (177 USD) continued treatment from an unqualified HCW. Among children with minor injuries, around 78% fathers (n=14) and 88% mothers (n=22) with a primary level of education or below, 86% fathers (n=24) and 79% mothers (n=19) with a secondary level of education or above, and 89% (n=24) of those living in a household with a monthly expense of 15,000 BDT or less (177 USD) adhered to treatment by an unqualified HCW (Figure 2).

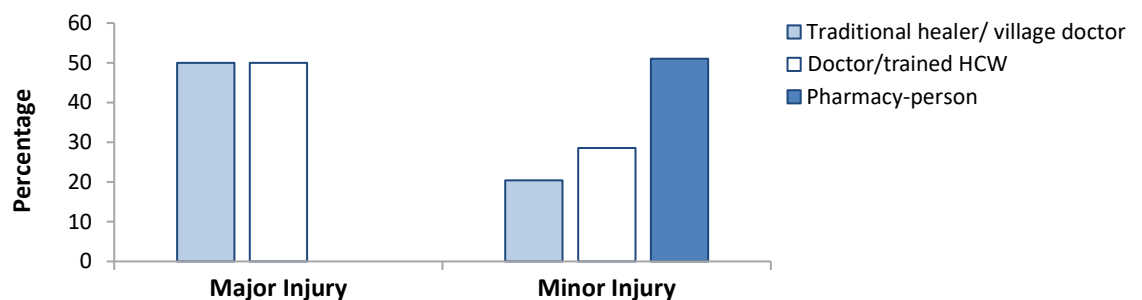
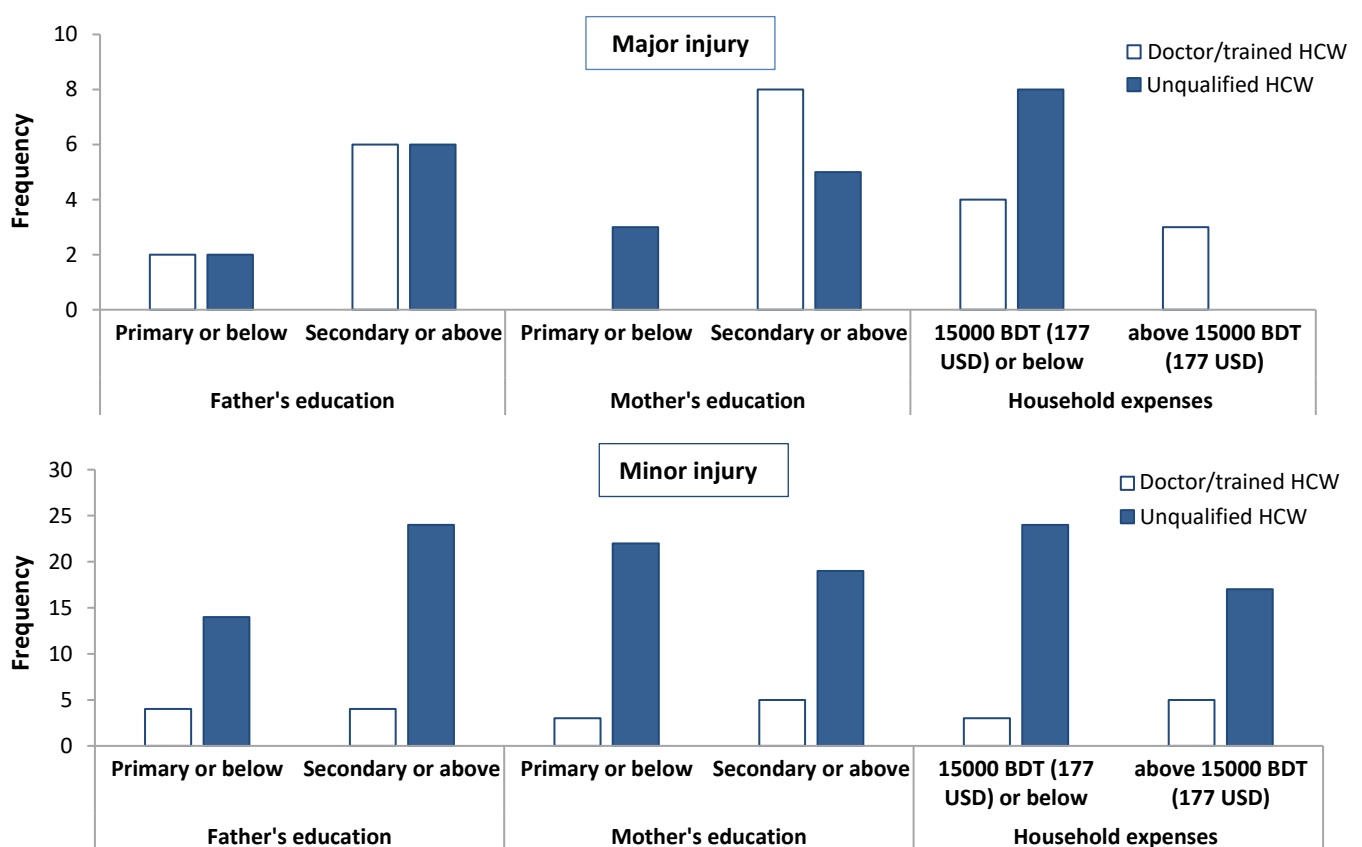


Figure 1. Complete treatment continuation behavior after a child got injured with major (n=16) or minor injuries (n=49).



*Currency conversion was based on the average 2018 exchange rate (1 BDT=0.0118 USD). HCW: health care worker.

Figure 2. Distribution of complete treatment continuation behavior of family/caregivers for children with major (n=16) or minor (n=46) injuries by parental education and household expenses.

Discussion

Despite necessity, information regarding health-seeking behaviors of caregivers following child injuries is scarce since 2003 in Bangladesh. Here we describe these attributes in caregivers of non-fatally injured children, who were identified from a previous prevalence survey in 2018 in a rural sub-district of Bangladesh.¹⁶ Our findings revealed that nearly all child injuries prompted some form of health-seeking behavior, whether through first aid and/or subsequent treatment. Relatives mostly provided first aid, with practices mainly involving the application of various substances on the affected area. Among children with transport injuries, immediate treatment was sought from a doctor/trained HCW, regardless of the severity. A higher proportion of children with major injuries received first aid from a doctor/trained HCW than those with minor injuries. Treatment by an unqualified HCW was continued more than those of a doctor/trained HCW to ensure recovery from both types of injuries.

With the exception of one child, at least some form of treatment was sought after sustaining any type of injury. The shift in health-seeking behavior observed in this population contrasts with previous studies that reported treatment-seeking by 80% rural Bangladeshi respondents and around 70% in India after an injury.^{23,25,26} A systematic review reported that a median of 73% of caregivers sought care for children suffering from diarrhea, pneumonia, or malaria in LMICs and no treatment was sought for 21.3% of children having diarrhea.²⁷ This dissimilarity may be due to inclusion of all age groups and illnesses in other studies, whereas our study specifically focused on child injury in a defined geographical context, reflecting heightened awareness and concern for child well-being among dwellers.

We found that most injured children received first aid. In contrast, a systematic review reported that only 11–65% of trauma victims received first aid by lay-people.²⁸ The observed difference may be due to age groups, injury severity, and local context. Relatives were found to provide first aid to a majority of children irrespective of injury type, as also noticed in Indian children, though another study on children aged less than five years reported receiving first aid from a trained HCW.^{26,29} The proportion of children receiving first aid from a trained HCW (41%) was close to that from relatives (47%) for major injuries, but was much lower for children with minor injuries, with a shift to relatives (54%) or unqualified HCWs (25.5%)—likely due to the immediate nature of the injury.^{23,25} Although the nature of first aid practices was depicted, their

appropriateness was not evaluated, albeit controversial. Other studies have found incorrect first aid in up to 83.7% of cases.²⁸

As first aid measures after falls and cuts, rural caregivers, as noticed in this study, commonly used substances such as kerosene, toothpaste, oil, water, leaves, wet cloths, non-specific ointment, and antiseptic cream with the traditional healing beliefs in these substances for pain relief and promoting healing. Similar practices have been observed in other LMICs, including India, Ghana, and Nigeria, though the substances used varied slightly.^{15,24,29–32} The only notable differences in this rural community were the use of a wet cloth to cover the injured area, which had been practiced by Bangladeshi urban dwellers in the early days; and ‘use of antiseptics’, which was not common then in rural Bangladesh.¹⁵ The practice of tying the affected area with a piece of cloth is also currently observed in Ghana.¹¹

Regarding burn injuries, the recommended practice of washing the injured area with running water was applied in only one case, with many caregivers instead choosing coconut oil, toothpaste, iced water, or other non-specific home remedy. Only 29% of Nigerian caregivers reported using water lavage, while 73% of parents from the United Kingdom did so, although the adequate length of time is poorly practiced.^{33,34} The application of food, including raw eggs, pap, butter, and milk has been observed not only in Bangladesh, but also in Nigeria, India and minor ethnic groups living in the United Kingdom likely driven by customary beliefs.^{15,29,30,33,34}

We found a noticeable change in the health-seeking behaviors of caregivers for the management of transport injuries, with more children being taken to a doctor/trained HCW compared to the 2003 survey, where medical care was sought only for suspected fractures or when first aid was inadequate.¹⁵ Caregivers’ awareness and increased availability of local health care facilities might have led to the observed change. Contrastingly, Indian people possess similar ‘knowledge’ but practice differently.^{29,31} The practice of twirling an affected person overhead after a near-drowning event is a consistent practice in Bangladesh but differs from India.^{15,29}

Following first aid, nearly three-fifths of injured children sought further medical care, consulted multiple HCWs on some occasions, and mainly adhered to treatment given by unqualified HCWs. This behavior aligns with long-standing practices in rural Bangladesh and, across LMICs, indicating convenience,

affordability, socio-cultural factors, and injury type influencing treatment decisions.^{25,27,35}

Limitations

Limitations of this study include the non-random selection of the study area which might not be a good representative of country's rural areas and use of self-report data for injuries and subsequent events. However, we tried to minimize poor recall and ensure data validity through focused injury remembrance, i.e., by asking for injury types that occurred in a specified period, rather than reporting overall injuries irrespective of severity or duration. Additionally, our approach to maintain stringent data quality limited the sample size to injured children only; therefore, the sampling technique, as well as the absence of weighting in the analysis due to the unknown population size, restricted our interpretation of the findings and, hence, our results should not be generalized beyond the sampled population, or should be used with great caution.

Public Health Recommendations

Study revealed minimum changes in first aid practices despite a fifteen-year gap. Choosing a HCW for treatment continuation after major/minor injuries are heavily directed to an unqualified one and often dictated by family's socio-economic context. Therefore, all injury prevention programs should incorporate immediate application of best practices of first aid and health-seeking after the injury. Additionally, we recommend for in-depth qualitative studies to understand the scenario before implementing targeted interventions.

Conclusion

Child injuries pose a substantial threat to immediate well-being and to a productive adulthood if not treated appropriately and timely. This study found nearly all injured children in a rural Bangladeshi sub-district receiving some form of care, and relatives predominantly providing first aid with traditional approaches and seeking subsequent treatment if felt needed. Henceforth, all injury prevention programs should include dissemination of appropriate first aid and following treatment-seeking responses of caregivers. The reliance on unqualified HCWs for continuation of treatment underscores the necessity of integrating behavior change communication and targeted training programs for caregivers within community-based injury prevention initiatives. However, qualitative studies should be carried out for in-depth understanding of such behavior before designing interventions.

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Authors Contributions

Nawroz Afreen: Conceptualization, data curation, methodology, formal analysis, funding acquisition, investigation, project administration, visualization, writing—original draft, writing—review & editing. **Mehejabin Nurunnahar:** Data curation, formal analysis, writing—original draft, writing—review & editing. **Meerjady Sabrina Flora:** Conceptualization, methodology, fund acquisition, supervision, writing—review & editing.

Ethical Approval

The ethical approval of the study was taken from the Institutional Review board of the Institute of Epidemiology, Disease Control and Research (IEDCR), (reference number: IEDCR/IRB/2018/04, dated 23 Apr 2018).

Informed Consent

Verbal assent of children aged greater than seven years and informed written consent were obtained from the mothers, fathers, or caregivers of the children involved in the study.

Data Availability

The data that support the findings of this study are available on request from the corresponding author. The data is not publicly available due to privacy or ethical restrictions.

Conflicts of Interest

The authors declare that they have no conflict of interests.

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