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Knowledge Regarding Childhood Injury Among Mothers of Under 5 Children

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Abstract

An injury refers to physical harm to the human body that occurs when it is exposed to a level of force exceeding its normal physiological capacity to withstand it. Injuries in childhood represent a significant public health concern, as they contribute greatly to illness, disability, and death among children. The present study aimed to assess the knowledge regarding childhood injury among mothers of under 5 children in Tulsipur municipality ward number 1 of Dang. A descriptive cross sectional study was conducted among 88 mothers by adopting purposive sampling technique. Semi structured interview schedule was developed which consisted of two parts. Face to face Interview was taken in their feasible time, approximately 25-30 minutes' time was given. The data were analyzed through descriptive statistics (frequency, percentage) and inferential statistics (Chi-square). The result of the study showed that only 13(14.8%) of the respondents have low level of knowledge, 50 (56.8%) have moderate knowledge and 25 (28.4%) have high level of knowledge about childhood injury There was no statistically significant association between level of knowledge and selected socio demographic variable which are age, occupation and education. Thus, the study concluded that more than half of respondents had moderate level of knowledge Therefore, the study recommends providing mass education program in the community regarding injury prevention.

Introduction

Injuries are the leading yet predictable, avoidable, and preventable cause of morbidity and mortality among under-five children worldwide (Adhikari et al., 2017).The World Health Organization defines accidents as "an unexpected and unintended event causing physical and mental injuries." (Krishnamurthy et al., 2021; Semchenko et al., 2021). Paediatric injuries have significant physical, psychological and socioeconomic consequence (Onyemaechi et al., 2020). Globally, 5.82 million deaths occurred among children under five years of age in 2015, with an injury-specific mortality rate of 73 per 100,000 populations. (Ahmed et al., 2023; Sharma et al., 2018). Although injury mortality in children declined substantially from 1990 to 2013 in both developed and developing countries (<1 year: −50% vs. −50%; 1–4 years: −56% vs. −58%) injuries continue to be a major public health concern ((Huang et al., 2016)

Childhood injuries resulting in disability represent a critical global health challenge, particularly for children under five and their families. Unintentional injuries, including falls, fractures, burns, scalds, and poisoning, pose significant risks (Balogun et al., 2025). Globally, under-five child mortality has reduced by 48%; however, unintentional injuries remain a significant contributor to childhood deaths. In India, approximately 165 children die every day due to unintentional injuries (Liu et al., 2019). According to the National Crime Records Bureau, 15–20% of deaths among children in India are due to injuries, prevalence of accidents among under-five children was 22.1%, with falls (68%) being the most common type of accident (Krishnamurthy et al., 2021).

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Similarly, another study conducted in India reported that the prevalence of unintentional injuries was 39.1% (95% CI 35.4–42.9%) and the incidence rate was 16.5 (95% CI 14.7–18.3) per 100 child-months (Sharma et al., 2018).

Home injuries among preschool children are increasingly recognized as a community health problem. Preschool children are particularly vulnerable to home accidents, and many injuries occur in the presence of caregivers due to lack of supervision or absence of preventive measures (Nour et al., 2018, (Carlsson et al., 2016)). Child care is primarily the responsibility of mothers in many societies. The mother's knowledge significantly influences the nature and quality of care provided to the child. Several studies have revealed that a mother's level of education positively impacts her knowledge and management of child health issues (Kamau-Thuita et al., 2002). Mothers' knowledge also improves with age, experience, and previous exposure to child accidents (Lafta et al., 2014).

Studies assessing maternal knowledge regarding childhood injury prevention show varying levels of awareness. A cross-sectional study conducted in Egypt among 368 mothers reported that 35.9% had good knowledge, 54.3% had average knowledge, and 9.5% had poor knowledge (Nour et al., 2018). A study conducted in India among 230 mothers showed that 96.1% had moderate knowledge, while 3.9% had inadequate knowledge (Debnath & Reang, 2014).

Another study among urban mothers of toddlers in India reported that 66.7% had adequate knowledge, 33.3% had moderately adequate knowledge, and none had inadequate knowledge regarding prevention of home accidents(Gholap, 2017). In Nepal, a descriptive cross-sectional study among 147 mothers revealed that 2.9% had inadequate knowledge, 65.5% had moderate knowledge, and 31.6% had adequate knowledge regarding prevention of childhood accidents (Adhikari et al., 2017).

Despite the reduction in global child mortality, the South Asian region still has one of the highest child mortality rates in the world (51 deaths per 1,000 live births), accounting for three out of ten child deaths globally (Pant et al., 2015).

In the study conducted in India found that Over the past year, the overall prevalence of injuries among children under 14 years of age was 23%. The prevalence was 15.2% among infants (32 cases), 24.5% among children aged 1–4 years (110 cases), and 23.7% among those aged 5–14 years (274 cases). Injuries were significantly more common among boys than girls ($p = 0.001$). All reported injuries were accidental, with the majority (68.2%) occurring at home, followed by injuries taking place at school (Mahalakshmy et al., 2011).

A study conducted in Lebanon showed that prevalence of childhood injury was 20% in the past 12 months, mostly sustained by males (53.8%) and children aged 5–10 years (38.7%). The most common type of injury was fall (48.4%), followed by burns (%7.5), and sports injuries (7.5%). Mothers are less knowledgeable regarding injuries prevention and unprepared to prevent their children from getting injured and it represents a major health problem in Lebanon (Al-Hajj et al., 2023).

Given that many childhood injuries are preventable, preventive strategies based on surveillance data and identification of risk factors are essential. Effective prevention requires a combination of environmental and behavioral modifications achieved through engineering, enforcement, and education (Sharma et al., 2018). Therefore, evaluating maternal knowledge regarding accident prevention is crucial to enhance compliance with safety recommendations and reduce preventable injuries. Hence, the present study aims to assess the knowledge of mothers having under-five children regarding childhood injuries and their prevention.

Methods

A descriptive cross-sectional research design was adopted to assess mothers' knowledge regarding childhood injury among under-five children. The design was used to describe the characteristics of the study population and determine the frequency of the phenomenon in a natural setting without manipulation of variables.

The study was conducted among mothers having under-five children residing in Tulsipur Municipality Ward No. 1, Dang. In this study area, mothers from diverse cultural, educational, and socioeconomic backgrounds were living. The study population consisted of mothers residing in Pasupati tole and Manakamana tole of ward number 1 having under five children. The sample size for this study was 88 mothers. A non-

probability purposive sampling technique was used to select the respondents, as mothers are the primary caregivers and play an important role in preventing home injuries and road traffic accidents among young children. Mothers willing to participate in the study were included. Mothers with hearing problems, inability to speak, or psychological illness were excluded from the study.

Data were collected using a semi-structured face to face interview schedule developed according to the objectives of the study. The tool consisted of two parts: Part I included socio-demographic variables, and Part II included questions related to mothers' knowledge regarding childhood injury, including types, causes, signs and symptoms, preventive measures, and first aid management for under-five children. The validity of the instrument was ensured through expert opinion, extensive literature review, and consultation with the research exports. The questionnaire was prepared in English, translated into Nepali, and back-translated into English to maintain consistency. Reliability of the tool was maintained by conducting a pretest among 10% (9 mothers) of the sample in a similar setting at Ganari tole of ward number 1.

Prior to data collection, permission was obtained from the concerned authority, and informed consent was taken from each respondent. Data were collected through face-to-face interviews in the Nepali language using simple and clear sentences. Each interview took approximately 25–30 minutes. Data collection was carried out from 2079/10/20 to 2079/11/20. Anonymity and confidentiality were maintained, and the collected information was used only for research purposes. After data collection, the data were checked for completeness and accuracy, edited, coded, and entered into Microsoft Excel and transferred to SPSS version 16 for analysis. Data were analyzed using descriptive statistics (frequency and percentage) and inferential statistics (chi-square test). The findings were presented in tabulated form.

Findings of the Study

Table I: Socio-Demographic Characteristics of Respondent

N=88

Variables	Frequency	Percent (%)
Age Group (Years)		
18-22	14	15.9
23-27	37	42.1
28-32	29	32.9
33 and above	8	9.1
Occupation		
Agriculture	19	21.6
Business	21	23.8
Service	12	13.6
Daily wages	9	10.4
Home maker	27	30.6
Education		
Can't read and write	5	5.6
Can read and write	12	13.7
Basic level (1-7 class)	20	22.8
Secondary level (8-12 class)	32	36.4
Higher education (bachelor above)	19	21.5

Regarding age group, the majority of the respondent 37 (42.1%) were of age group 23-27 years whereas only few 8 (9.1%) of respondent were of age group 33 and above years. Moreover, regarding the occupation most of the respondent 27 (30.6%) were home maker whereas least 9(10.4%) were involved daily wages. Considering the educational status 32 (36.4%) of the respondent had secondary level education whereas minimum 5(5.6%) were not able to read and write. (Table1)

Table 2: Introduction of Childhood Injury

n=88

Description	Number	Percent (%)
Meaning of childhood injury		
Injury that causes bodily damage intentionally or unintentionally to child while playing, running and eating	75	85.2
Injury that occurs to child only inside home	5	5.6
Injury that occurs to child only outside home	4	4.5
Injury that occur in young adult that can be prevented	4	4.5
Risk group		
Neonate (below 1 years)	9	10.2
Toddler (1-3 years)	61	69.4
School age (6-12 years)	14	15.9
Adolescence (12-18 years)	4	4.5
Types		
Fall	84	95.4
Drowning	70	79.5
Burn	71	80.6
Road Traffic accident	63	71.5
Suffocation	52	59.0
Chocking	44	50.0
Others	19	21.5

Regarding the meaning of childhood injury, 75 (85.2%) of the respondent answered injury that causes bodily damage intentionally or unintentionally to child while playing, running and eating which is the correct answer. In relation to the risk group, 61 (69.4%) of the respondent answered toddler (1-3 years) as the risk group of childhood injury. Regarding the types of injury, all most all 82 (95.4%) of the respondent replied fall as the type of injury. (Table 2)

Table 3: Knowledge on Fall Injury

n=88

Description	Number	Percent (%)
Causes of fall *		
Increased motor activities	64	72.7
Climbing in ladder, chair and bed	74	84.0
Slippery floor	75	85.2
Others	39	44.3
Sign and symptom seen after fall*		
Cut and bruises	72	81.8
Pain	75	85.2
Bleeding	73	82.9
Difficulty in walking	44	50.0
Fracture	52	59.0
Head injury	41	46.5
Others	26	29.5
Preventive measures of fall*		
Supervision by parents	73	82.9
Use of slide rail in stairways	68	77.2
Keeping windows close	60	68.1
Keeping the floor dry	71	80.6

Ensure baby bed rail for safety	50	56.8
First aid management of fall*		
Rescue child from accidents	60	68.1
Quickly assess child's condition	77	87.5
Call for help if necessary	58	65.9
Check for airway obstruction	45	51.1
Immobilize the injured part	52	59.0
Cold compress on bruises in minor injury	45	51.1
If severe injury take child to nearest hospital	70	79.5

Multiple response (*)

Regarding the causes of fall injury, 74 (84.0%) of the respondent answered climbing in ladder, chair and bed as the causes of fall injury in under five children. In relation to sign and symptom, 75(85.2%)of the respondent answered pain as sign and symptom seen after fall injury. Regarding preventive measures 73 (82.9%) of the respondent answered Supervision by parents as the preventive measures of fall injury. Majority 77(87.5%) of the respondent answered quickly assess child's condition as first aid management after fall injury. Table (3)

Table 4: Knowledge on Drowning

n=88

Description	Number	Percent (%)
Causes of drowning *		
Submersion in water source such as bucket water	79	89.7
Falling into lakes, river, pond and well	60	68.1
Leaving child alone near bath tub with water	52	59.0
Failure to wear life jacket in swimming pool	44	50.0
No barrier around the pool	39	44.3
Others	23	26.1
Sign and symptom after drowning*		
Cough	71	80.6
Vomiting	73	82.9
Abdominal swelling	66	75.0
Difficulty in breathing	57	64.7
Blue colour on skin and lips	45	51.1
Loss of consciousness	51	57.9
Others	21	23.8
Preventive measure of drowning*		
Close observation when child is near bathtub	67	76.1
Covered bucket of water around home	64	72.7
Close unused pond and well	65	73.8
Keeping bars near swimming pool	62	70.4
Use life jacket near swimming pool	50	56.8
First aid after drowning*		
Remove the child from water source	77	87.5
Place child in comfortable position	72	81.8
Remove any obstruction from the victim mouth	59	67.0
Remove water by keeping head upside down by pressing abdomen	55	62.5
Keep the person warm by removing wet clothes	60	68.1
Seek for help to transfer victim to hospital	66	75.0

Multiple response (*)

In relation to the causes of drowning, almost all 79 (89.7%) of the respondent answered submersion in water

source such as bucket water as the causes of drowning in under five children.

Moreover, 73 (82.9%) of respondent replied vomiting as sign and symptom after drowning. regarding the preventive measure of drowning 64 (72.7%) of the respondent replied covered bucket of water around home as preventive measure. Regarding the first aid management 77 (87.5%) of respondent replied remove the child from water source. (Table 4)

Table 5: Knowledge on Burn Injury

n=88

Description	Number	Percent (%)
Causes of burn*		
Scalds burn	85	96.5
Moist burn	55	62.5
Electrical burn	58	65.9
Chemical burn	49	55.6
Others	18	20.4
Preventive measures of burn*		
Keep matches, lighter and candle out of child reach	80	90.9
Keep hot drinks and food far from children	70	79.5
Put child safety covers on all electrical outlets	54	61.3
While cooking food never hold a baby	60	68.1
Keep the child away from the source of fire	60	68.1
First aid of burn*		
Remove the child from the area of accident	70	79.5
Cool the burn with running water for 30 minutes	54	61.3
Cover burn site with a clean cloth	67	76.1
Never apply toothpaste, aloevera on injured site	50	56.8
Seek medical help as soon as possible	72	81.8

Multiple response (*)

In relation to the causes of burn, maximum 85(96.5%)of the respondents answered Scald burn as the causes of burn. In relation to preventive measures, 80 (90.9%) of the respondent answered keep matches, lighter and candle out of child reach as preventive measures of burn.

Regarding first aid management 70 (79.5%) of respondent answered remove the child from the area of accident as first aid of burn. (Table 5)

Table 6: Knowledge on Poisoning

n=88

Description	Number	Percent (%)
Causes of poisoning*		
By keeping household products like harpic, acid, kerosene in reach to child	79	89.7
Inappropriate storage of harmful product like insecticide, pesticide	78	88.6
Accidental swallowing of parents' medicine	56	63.6
Food poisoning	60	68.1
Others	15	17.0
Preventive measure of poisoning*		
Parents should carefully observe child at home	74	84.0
Keep medicine and chemical out of sight and reach of children	7 6	86.3
Store chemicals in their original container with labels	57	64.7
Keeping any kind of medicine far away from children	64	72.7
Keep poisonous substance inside locked drawer	64	72.7

First aid management of poisoning *		
Assess the child's breathing condition	71	80.6
If substance is still in child's mouth make it spit out	63	71.5
Identify the poison if possible, probably amount and time of ingestion	53	60.2
Wash poisonous substance with plain water if present in skin surface	48	54.4
Immediately take the child to the nearest hospital	66	75.0

Multiple response (*)

Regarding the causes of poisoning, 79 (89.7%) of the respondent answered, by keeping household products like harpic, acid, kerosene in reach to the child. Regarding preventive measures 76 (86.3%) of respondent answered that keep medicine and chemical out of sight and reach of children. Likewise, 71 (80.6%) of the respondents replied assess the child's breathing condition as the first aid management of poisoning. (Table 6)

Table 7: Knowledge on Suffocation and Foreign Body Aspiration

		n=88
Description	**Number**	**Percent (%)**
Causes of suffocation, foreign body aspiration and chocking*		
Pulling of plastic bags, cleaning bag over the child head	70	79.5
Covering of child nose and mouth with blanket and pillow	80	90.9
Airway blocked with foreign object	63	71.5
Inhaling of dry beans, hard candy and marbles while playing	70	79.5
Swallowing of hard food or foreign body such as battery, coin	75	85.2
Playing or running with food in mouth	61	69.3
Feeding large pieces of food at one time	62	70.4
Feeding the child in lying in bed	70	79.5
Preventive measure of Suffocation and foreign body aspiration*		
When sleeping monitor if blanket cover faces of child	75	85.2
Keep all the plastic bag, cleaning bag out of the reach from child	61	69.3
Ensure small objects are kept out of reach of children	76	86.3
Ensure food pieces are cut into small sizes according to child age	6 4	72.7
Food as nut, hard candy should not be given to under one-year child	48	54.5
Instruct child not to play while eating	62	70.4
First aid of foreign body aspiration and chocking*		
Quickly assess the child's condition	74	84.0
Make the child breath through the mouth	57	64.7
Encourage the child to lean forward and cough	56	63.6
Immediately take the child to nearest hospital in severe cases	82	93.1

Multiple response (*)

Regarding the causes of suffocation, the majority 70 (79.5%) of respondent answered that pulling plastic bag, cleaning bag over child head as the causes of suffocation. Regarding the causes of foreign body aspiration and chocking, 75 (85.2%) of the respondents answered swallowing of hard food or foreign body such as battery, coin. In terms of preventive measures of suffocation, most of 75 (85.2%) respondent answered that when sleeping monitor if blanket cover faces of child. Regarding preventive measures of foreign body aspiration and chocking, 76(86.3%) of respondents answered to ensure small objects are kept out of reach. Regarding first aid of foreign body aspiration and chocking the maximum 74 (84.0%) of the respondent answered that quickly assess the child's condition and 56 (63.6%) of the respondent answered encourage the child to lean forward and cough. (Table 7)

Table 8: Knowledge on Road Traffic Accident

n=88

Description	Number	Percent (%)
Meaning of road traffic accident		
An event which result in a person to fall due to illness	5	5.6
An event which occur on a way by moving vehicle	71	80.7
An event which occur on a way only by moving truck	8	9.1
An event which occur from exposure to heat, fire and radiation	4	4.6
Causes of road traffic accident*		
Riding tricycle on the road without following traffic rules	70	79.5
Playing and running at the road side	72	81.8
While crossing road not obeying or following traffic lights	61	69.3
When inside moving car not wearing of seatbelt to child	56	63.6
Others	40	45.4
Preventive measures of road traffic accident*		
Parents should guidance child while playing in roadside	68	77.2
Hold the child hand while crossing the road	64	72.7
Teaching the child about road traffic lights	60	68.1
When inside the moving car put seatbelt for the child	60	68.1
Use of helmet while child is playing tricycle	45	51.1
First aid of road traffic accident*		
Rescue the child from the area of accidents	68	77.2
Quickly assess the child's condition and nature of injuries	69	78.4
Assess the airway of the child	49	55.6
Check for airway obstruction	48	54.5
If child has no airway obstruction and		
No respiration give mouth to mouth respiration	49	55.6
Immediately refer child to the hospital	75	85.2

Multiple response (*)

In relation to meaning of road traffic accident, 71 (80.7%) of respondents answered correctly, as an event which occur on a way or open public street by moving vehicle. In addition, 72(81.8%) of respondent answered playing and running at road side as the causes of road traffic accident. Similarly, 68 (77.2%) of respondent answered that parents should guide child while playing in road side as the preventive measure of road traffic accident. Regarding the first aid of road traffic accident, 69(78.4%) of them answered that quickly assess the child's condition and nature of injuries. (Table 8)

Table 9: Knowledge Level Regarding Childhood Injury

n=88

Description	Number	Percent
Low level (<60%)	13	14.8
Moderate level (60 to 80%)	50	56.8
High level (80 to 100%)	25	28.4

Yimer, Abera et.al 2013

Regarding the level of knowledge, only 13(14.8%) of the respondents have low level of knowledge, 50 (56.8%) have moderate knowledge and 25 (28.4%) have high level of knowledge about childhood injury. (Table 9). Regarding the association between level of knowledge and selected socio demographic variables, there is no statistically significant association between age, marital status, occupation and education.

Discussion

The present study revealed that the majority of respondents, 37 (42.1%), were in the age group of 23–27 years. Regarding occupation, the highest proportion of respondents were homemakers, accounting for 27(30.6%). With respect to educational status, only 12(13.7%) of the respondents were able to read and

write only. These findings were consistent with a study conducted by Adhikari B in 2017 in Bara, Nepal, which reported that more than half of the respondents (53.4%) were in the age group of 25–29 years and the majority (81.6%) were housewives. However, the finding of the present study differed from that study in terms of educational status, where 39 (22.4%) of the respondents were reported to be able to read and write only (Adhikari et al., 2017).

Regarding the meaning of childhood injury, the majority of respondents, 75 (85.2%), correctly answered childhood injury as bodily damage that may occur intentionally or unintentionally to a child during activities such as playing, running, or eating. The finding was similar with the study conducted by Adhikari B, which reported that 81% of respondents correctly understood the meaning of childhood injury(Adhikari et al., 2017).

The present study also showed that the majority of respondents, 61 (69.4%), identified toddlers (1–3 years) as the age group at greatest risk of childhood injury. This finding was supported by a study conducted by Gholap PR in 2017, which reported that 88 (76%) of respondents identified toddlers as the most vulnerable age group for childhood injury (Gholap, 2017).

In terms of the level of knowledge regarding childhood injury, the study revealed that 13 (14.8%) of respondents had a low level of knowledge, 50 (56.8%) had a moderate level of knowledge, and 25 (28.4%) had a high level of knowledge. These finding were similar with the study conducted in Saudi Arabia showed that, 24.7% demonstrated a high level of knowledge about injuries, while 38.8% had a moderate level of awareness, and 36.5% had a low level of knowledge on the subject(Bayomy et al., 2025). These findings were also supported by a study conducted in Nepal, which reported that more than half of the respondents (68.4%) had fair knowledge and more than one-fourth (31.6%) had good knowledge regarding the prevention of childhood accidents (Adhikari et al., 2017). Similarly, a study conducted in Iran was in contrast with the present study which found that 56.09% of mothers had good knowledge and 24.78% had poor knowledge regarding home injuries (Younesian et al., 2016) Furthermore, a study conducted in Egypt reported that more than one-third (35.9%) of respondents had poor knowledge about home accidents which is also in contrast with the present study (Nour et al., 2018).

Regarding the association between the level of knowledge and selected socio-demographic variables, the present study found no statistically significant association between age, occupation, and educational status. This finding of the present study was consistent with the study conducted in Nepal, which also reported no significant relationship between age, occupation, and educational status (Adhikari et al., 2017). Similarly, the finding of the present study was incontrast with the study conducted in Nigeria showed that Mothers' age and educational attainment demonstrated statistically significant correlations with knowledge scores (Balogun et al., 2025). The finding of the present study was also in contrast with the study conducted in Saudi Arabia which showed that Knowledge was associated with mother's age, educational level, employment (Bayomy et al., 2025).

Conclusion and Implications

This study assessed the knowledge of mothers of under-five children regarding childhood injuries. The findings revealed that the majority of respondents were between 23–27 years of age, and most were homemakers. In terms of education, a small number of respondents were able to read and write only. Most mothers were able to correctly define childhood injury and recognized toddlers aged 1–3 years as the group at highest risk.

In relation to knowledge level, more than half of the respondents had a moderate level of knowledge, whereas a smaller proportion demonstrated high knowledge and only a few had low knowledge. The study further showed that there was no statistically significant association between mothers' level of knowledge and selected socio-demographic variables such as age, occupation, and educational status.

The findings provided baseline information regarding maternal knowledge of childhood injuries and emphasize the need to strengthen health education programs related to childhood injury prevention. The results may assist healthcare providers, community health workers, and local policymakers in designing targeted awareness and prevention strategies to enhance the safety of under-five children.

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