

Maternal Awareness on Home Accidents of Toddlers: A Study of Putalibazar Municipality, Syangja District, Nepal

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Abstract: Background: Children are at risk for injury because of their normal curiosity, impulsiveness, and desire to master new skills and imitate adult behavior from an early age. Injuries are the first leading but predictable, avoidable and preventable cause of morbidity and mortality among under five-year children worldwide.

Materials and Methods: A descriptive cross-sectional study aims to find out maternal awareness on home accident of toddlers. The non-probability purposive sampling technique was used to collect data. The structured interviewer administered questionnaire was used to collect data. Total sample size was 108 and Putalibazar Municipality in Syangja District was chosen as the study area. Data was entered in Statistical Package for Social Science (SPSS) 16 version and analyzed by using descriptive and inferential statistics. Inferential statistics Chi-square test was used to identify the association of the data between maternal awareness on home accident of toddler and background information. The p -value < 0.05 was considered statistically significant.

Results: The finding revealed that 49.1 percent of respondents had adequate awareness where the total score of instrument is 44 and mean score of respondent awareness is 33.57 ± 3.79 . There was statistically significant association between maternal awareness with educational status ($p < 0.001$) and income status of family ($p = 0.030$).

Conclusion: Hence, there was a need to conduct educational programs about prevention of childhood accident to the mothers and focus should be provided to the mothers having basic education and insufficient family income.

Keywords: Home accident; Maternal awareness; Mother; Toddler.

Date of Submission: 06-11-2020

Date of acceptance: 21-11-2020

I. Introduction

Children are at risk for injury because of their normal curiosity, impulsiveness, and desire to master new skills as they also imitate adult behavior from an early age. Children feel safe and secure in their home, but most of the injuries exist there. Life cannot be risk free but utilizing household safety measures can prevent most household accidents. Most of the minor accidents are unavoidable but major and serious accidents can be prevented if the adults take care of their children⁵. The main causes of accidents in the home are falls, fires and burns, drowning, suffocation, choking, poisoning and cuts and lacerations³.

In today's world, in developed as well as developing countries, every year thousands of children die or permanently disabled as a result of accidental injuries¹³. Child injury is a major global public health problem with the highest burden in low- and middle-income countries; they are also a rising problem for children in Nepal and other Asian countries⁹. In many developing countries, injuries are one of the major causes of death in children in the age group of 1-5 years¹³. More than 95% of all child injury deaths occur in low-income and middle-income countries. Although the child injury death rate is much lower in high-income countries, injuries still account for about 40% of all child deaths. Child injuries are strongly related to social determinants¹⁴. The outcome of the study of mothers of under-five, who came to the Pediatrics Department of the Korle-Bu Teaching Hospital Ghana, showed that 73.3% have had their children suffered from child injuries. The study observed that burns and cut /wounds were the most common injury. In all 70 percent of the respondents recorded child injuries more than once in their homes¹⁰.

Maternal awareness on accident prevention plays a vital role in minimizing the occurrence of accidents among children and reduces the chance of physical and psychological trauma to children. A cross-sectional study was conducted on 368 mothers attending outpatient pediatric clinics at Maternity and Children Hospital in Egypt, the knowledge score of mothers about home accidents shows that more than one-third (35.9%) of them had good knowledge and 54.3% and 9.8% had average and poor knowledge respectively⁸. In the context of Nepal, the descriptive cross-sectional study was done in Bara district, this study was revealed that, out of 174

mothers having under five 2.9% had inadequate, 65.5% had moderate and 31.6% had adequate knowledge regarding prevention of childhood accident¹.

As per the WHO, globally 38.8% of total deaths occur due to unintentional child injury that is road traffic accident, drowning, fire burns, falls, and poisons in under-twenty years of age. Among them, in high income countries 12.2% and in low income and middle income country 41.7% of total death is caused by unintentional child injury.

According to household survey done in 3441 cases in Makwanpur district of Nepal, 193 cases of non-fatal unintentional child injuries were found and estimated an annual rate of non-fatal injuries of 24.6/1000 children. The rates were higher among the children of age groups 1–4 years and 5–9 years⁹. A descriptive study was done in Egypt in 2012, total respondents was 230 among them ninety six percent 96.1% had moderate knowledge, and 3.9% of the respondents had inadequate level of knowledge regarding common domestic childhood injuries and home-safety measures³. In 2014, descriptive study was conducted in Pokhara with 100 mothers who attended MCH clinic and having at least one toddler. This study revealed that 26.9% had good knowledge, 72.4% had average knowledge, and least 1% mothers had poor knowledge on accident prevention of infant and toddler¹².

Based on the literature review, toddlers are significantly at high risk of accident due to their curiosity, impulsiveness, and desire to master new skills. This could be prevented if mothers are aware of the possible risks. Available studies also indicated that mothers do not have enough knowledge about these risks. In the context of Nepal, limited studies have been carried out on maternal awareness on home accident of toddlers. So, the researchers are interested to assess the maternal awareness on home accident of toddlers at Putalibazar Municipality, Syangja, Nepal.

II. Materials and Methods

A cross-sectional descriptive study was carried out in Putalibazar Municipality, Syangja District of Gandaki Province. The study population was mothers having toddlers residing in the study area. The multi-stage random sampling technique was used in this study. From the Putalibazar municipality, Ward No.7 was chosen from lottery method. All the mothers having toddlers residing in the study area available during the study time and willing to participate were included in this study. The total mothers were 108.

The structured interviewer administered questionnaire was developed. It was categorized into two parts. Part I consisted of 12 items used to collect data about the respondent's characteristics like age, occupation, educational status, ethnicity of respondent, income of family, type of family, and any type of previous experience of accident. Part II consisted of total 22 items (7 multiple responses and 15 multiple choice questions), which comprised 7 items related to general concept of childhood accident, 3 items related to fall injury, 3 items related to cut injury, 3 items related to burn, 3 items related to poisoning, and 3 items related to foreign body aspiration. For multiple response questions, score one was given for each option and zero was given for wrong response and score one was given for right option and zero was given for wrong response for multiple option questions. Total score was 44. Instrument was developed in English version and translated into Nepali version to understand by respondents easily. Pretesting of instrument was done on 13 mothers beyond the study area. Prior to data collection, administrative approvals were taken from the concerned office. At first, the researchers contacted the female community health volunteers of each ward and visited each respondent with the help of female community health volunteers to find out houses having toddlers. Informed written consent was taken from respondents by explaining the objectives of the study to ensure their rights. Confidentiality was assured by not disclosing collected information to others and respondents were made clear that the data collected was used only for a research purpose. Interview was taken in a quiet and separate area of home and the interview sheet was filled in within 25 to 30 minutes. Respondents were free to refuse to answer any particular question that they feel uncomfortable to answer. The duration of study was 6 months from May 1, 2019 to October 30, 2019.

The collected data were checked and organized for accuracy and completeness and entered into Statistical Package for Social Science (SPSS) version 16 software. Data analysis was done by using descriptive statistics such as frequency, percentage, mean, and standard deviation. Inferential statistics Chi-square test was used to find out the association between levels of maternal awareness with background information. The p-value of < 0.05 was considered statistically significant.

III. Results

In this study, the collected data were presented in the tables that consisted of the background information of respondents and various causes, prevention and first aid of injury of toddlers. The study shows that the toddlers' injury was related to the maternal awareness, which is also presented in the tables.

Table no. 1: Background information of respondents

Characteristics	Number	Percent
n=108		
Age of mother in year		
16- 25	59	54.6
26-35	49	45.4
Mean \pm SD (24.78 \pm 3.36)		
Type Of occupation		
Homemaker	59	54.6
Agriculture	18	16.5
Employed	31	28.7
Education status		
Less than Primary school	13	12.0
Primary school completed	38	35.2
Secondary school completed	30	27.8
Higher Education	13	12.8
Bachelor degree completed	10	9.3
Post graduate degree	4	3.7
Types of family		
Joint	66	61.1
Nuclear	42	38.9
Ethnicity		
Upper Cast	63	58.3
Disadvantaged Janajati	25	23.1
Dalit	17	15.7
Relatively Advantaged Janajati	3	2.8
Total number of children		
One	74	68.5
Two	31	28.7
More than two	3	2.8
Youngest child's age in months		
13- 24	67	62.0
25-36	41	38.0
Sex of youngest child		
Male	67	62.0
Female	41	38.0
Income status		
Sufficient	97	89.8
Hardly sufficient	11	10.2
Sources of information*		
Family members	82	75.9
Friends	40	37.0
Media	26	24.1
Personal Experiences	21	19.4
School /Teacher/Book	7	6.5
History of home accident	48	44.4
Experience of accident management	48	44.4

Multiple Response*

Table 1 shows that the 16-25 age group respondents were 54.6 percent and the mean age of the respondents was 24.78 (SD \pm 3.36) years and 54.6 percent were homemakers, 27.8 percent of respondents had completed secondary level, 74 percent were from joint family, 58.3 percent belonged to upper castes. Likewise, 68.5 percent respondents had only one child, 62 percent had 13 months to 24 months child, and 62 percent respondents' youngest child was male. Majority of respondents (89.8%) had sufficient family income and 75.9 percent respondents' source of information was family members, 44.4 percent child had a history of an accident. Similarly, 44.4 percent respondent had experience on the management of home accident.

Table no. 2: Maternal awareness on general knowledge of home accident

Variables	Number	Percent
n=108		
Meaning of Accident		
Unexpected event that lead to childhood injury	107	99.1
Expected event that lead to injury	1	0.9
Common age		
Above 3 year	88	81.5
Below 3 year	20	18.5
Cause		
Lack of supervision	108	100
Common Home accident*		
Fall injury	105	97.2
Cut Injury	99	91.7
Burn	80	74.1
Poisoning	16	14.8
Foreign body aspiration	50	46.3
Meaning of accident prevention		
Act of preventing or making free from accident	107	99.1
Act of promoting disease	1	0.9
Immediate management of childhood accident*		
Shout for help to manage situation.	96	88.8
Keep first aid kit at home	83	76.9
Seek care immediately from nearby health facility.	77	71.3
Should be aware about childhood accident	35	32.4

Multiple Response*

Table 2 shows that mostly (99.1%) of the respondents answered accident as an unexpected event that led to childhood injury. Common age of accident is more than 3 years was answered by 81.5 percent respondents. Cent percent respondents answered unsupervised children were more prone for accident. Most of respondents (97.2%) said that fall injury is the commonest type of accident, cut injury (91.7%), burn (74.1%), foreign body aspiration (46.3%), and poisoning (14.8%). Regarding the meaning of accident prevention, 99.1 percent respondents were given the correct answers. Majority of the respondents (88.8%) were answered that they shouted for help to immediate management of childhood.

Table no. 3: maternal awareness on fall injury

Variables	Number	Percent
n=108		
Cause		
Newly developed locomotive skill	107	99.1
Grilled window and stair	1	0.9
First Aid		
If fractured body part, immobilize and take to hospital	88	81.5
If severe pain in body part, massage this area with hot oil	13	12.0
Apply hot compress to bruises	7	6.5
Preventive Measures*		
Make home environment safe	95	88.0
Good supervision.	91	84.3
Avoid slippery floor	64	59.3
Grill the windows, stairs	54	50.0

Multiple Response*

Table 3 illustrates that most of the respondents (99.1%) had awareness about cause and 81.5 percent respondents were aware about the first aid of fall injury. Similarly, 88 percent respondents were created home environment safe to prevent fall injury.

Table no. 4: Maternal awareness on cut injury

Variables	Number	Percent
n=108		
Cause		
Keeping sharp object in reach of children	108	100
First Aid		
Apply bandage to bleeding area to stop bleeding	91	84.3
Use toothpaste to injury site	16	14.8
Leave the injured area open	1	0.9
Preventive Measures*		
Keep sharp instrument away from child	106	98.1
Wear shoes to child while playing outside	93	86.1
Continuous supervision	79	73.1
Provide safe play material	54	50.0
Multiple Response*		

Table 4 reveals that cent percent of the respondents were aware about the cause of injury and majority of the respondents (84.3%) were aware about the first aid of cut injury. Most of respondents (98.1%) were aware of keeping sharp instruments away from children to prevent cut injury.

Table no. 5: Maternal awareness on burn

Variables	Number	Percent
n=108		
Cause		
Hot food/ water	108	100
First Aid		
Pour cold water in burn area	104	96.3
Break blister of burn	4	3.7
Preventive Measures *		
Keep away hot food and water from the reach of the child	104	96.3
Do not play with child while cooking in the kitchen	103	95.4
Do not allow child to take hot fluids by themselves	64	59.3
Do not leave unplug electrical appliance	44	40.7
Multiple Response*		

Table 5 shows that all respondents answered hot food/ water as the cause of burn and 96.3 percent respondents who poured cold water in the burn area as first aid. Similarly, 96.3 percent respondents answered that keeping away hot food and water from the reach of the children could prevent burn.

Table no. 6: Maternal awareness on poisoning

Variables	Number	Percent
n=108		
Cause		
Keep poisonous substances at reach of children	108	100
First Aid		
Try to induce vomiting by inserting a finger in the throat	108	100
Preventive Measures*		
Keep poisonous substance in tight containers.	97	89.8
Store soap, surf out of reach of children.	85	78.7
Never allow the child to eat anything without supervision	63	58.3
Never called medicine is sweet or candy.	18	16.7
Multiple Response*		

As Table 6 reveals, cent percent of the respondents were aware about cause and first aid for poisoning. Majority of respondents (89.8%) answered that keeping poisonous substances in tight containers as a preventive measures of poisoning.

Table no. 7: Maternal awareness on foreign body aspiration

Variables	Number	Percent
n=108		
Cause		
Play child with marbles, coin	105	97.2
Feed cold food	3	2.8
First Aid		
Back blow between shoulder by heel of hand	108	100
Preventive Measures *		
Don't allow child to play with small objects like coins, dry bean	103	95.4
Removing all small objects which the child can reach	72	66.7
Don't allow child to eat hard candy.	71	65.7
Feed child in small amount.	47	43.5

Multiple Response*

Table 7 shows that most of respondents (97.2%) had awareness about the cause of foreign body aspiration and cent percent respond were aware about first aid of foreign body aspiration. Similarly, most of the respondents (95.4%) answered that they did not allow their children to play with small objects like coins, or dry bean for prevention of foreign body aspiration.

Table no. 8: Level of maternal awareness on home accident of toddler

Level of knowledge	Number	Percent	Total score	Range
Adequate (≥ 33.57)	53	49.1	44	26-42
Inadequate (<33.57)	55	50.9		
Mean \pm SD (33.57 ± 3.79)				

Table 8 illustrates that 49.1 percent respondents had adequate awareness about home accident of toddlers where the mean score of awareness is 33.57 ± 3.79

Table no. 9: Association between maternal awareness on home accident of toddler with background information

Variables	Level of Awareness		χ^2	p- value
	Adequate n (%)	Inadequate n (%)		
Age of mother in year				
16- 25	29 (26.9)	30 (27.8)	0.000	0.986
26-35	24 (22.2)	25 (23.1)		
Type of occupation				
Unemployed	36 (33.3)	41 (38)	0.578	0.447
Employed	17 (15.7)	14 (13)		
Education status				
Basic	14 (13.1)	37 (34.3)	18.844	<0.001*
Secondary	28 (25.9)	15 (13.9)		
Higher	11 (10.2)	3 (2.8)		
Types of family				
Nuclear	33 (30.6)	33 (30.6)	0.58	0.869
Joint and Extended	20 (18.5)	22 (20.4)		
Total number of children				
One	36 (33.3)	38 (35.2)	0.17	8.191
Two or more than two	17 (15.7)	17 (15.7)		
Income status				
Hardly sufficient	2 (1.3)	9 (8.31)	0.313	0.030 [#]
Sufficient	51 (47.21)	46 (42.6)		
Experience of accident management				
Yes	23 (21.3)	25 (23.1)	0.046	0.830
No	30 (27.8)	30 (27.8)		

*p value significant at <0.05[#] Fisher's exact test

Table 9 depicts the association between maternal awareness on home accident of toddler with background variables. There is significant association between maternal awareness with education status ($p < 0.001$) and family income ($p = 0.030$). There is no association with age of mother, occupation, types of family, total number of children, and experience of accident management of mother.

IV. Discussion

Children are at risk for injury. Most of the minor accidents are unavoidable but major and serious accidents can be prevented by adult if children are taken care of. This study illustrated that maternal awareness on cause, prevention, and first aid of home accidents of toddlers such as fall, cut injury, burn, poisoning, and foreign body aspiration.

In the present study, the mean age of respondents was mean 24.78 (SD \pm 3.36) years with 59 percent age group of 16-25 years, which was similar to findings of Shrestha et al.¹². In the present study, unemployed was 71.3 percent, which was lower than the findings of Aldoon and Abeed², which showed the 85 percent. Basic schools were completed by 47.22 percent of respondents, which was similar to findings of^{1,2}, which showed 36.8 percent and 51.3 percent respectively. Seventy four percent of respondents were from the joint family, which was slightly higher to the findings of¹, which showed 54.6 percent. Sixty two percent were male child, which was similar to the findings of Kamel et al.⁵ that was 63.7 percent. This study also investigated the source of mothers' information about prevention and first aid of home accidents among toddlers. It revealed that majority, or 75.9% of respondents' sources of information were family members. But there were 43.3% of respondents gained their first aid information from mass media. The results were obtained from the study done by Mohamed et al.⁷. Similarly in the study by Santagatiet et al.¹¹ physicians were the most common source of information, followed by television/newspapers, the Internet, and relatives.

In the current study, 99.1% respondents had awareness about the meaning of accident. Cent percent respondents were known about the cause of accident, which was similar to study of Adhikari et al.¹. Concerning the awareness on fall injury, 99.1 percent were known about the cause of fall injury, which was higher than findings of Adhikari et al.¹, which showed 50.6 percent. Fall injury was the most (97.2%) common home accidents which was higher than the findings of Santagatiet et al.¹¹.

Majority of respondents were aware about first aid and preventive measures, which was similar with the findings of Adhikari et al.¹. Regarding the awareness on burn, 96.3 percent of respondents were aware about the first aid management and 65.4 percent respondents were aware about preventive measures of burn which was contrastive to the findings of previous study carried out by Adhikari et al.¹. Related to awareness on poisoning, cent percent of respondents had awareness about the first aid management, which is nearly similar to study done by Adhikari et al.¹, which showed 92.5 percent had awareness about the first aid management of poisoning. Concerning the awareness on foreign body aspiration, 97.2 percent were aware about the cause and 95.4 percent were aware about the preventive measures of foreign body aspiration, which was also consistent with study carried out by Adhikari et al.¹. Similarly, approximately 70% of the parents were aware of safety measures for the prevention of childhood injuries, in an Italian study by Santagatiet et al.¹¹.

The present study reported that 49.1 percent of the respondents had adequate awareness on home accident of toddlers. This finding was nearly similar to a study conducted in Bara district Nepal by Adhikari et al.¹, which illustrated that 31.6 percent had good knowledge. Likewise, 26.9 percent good knowledge and 72.4 percent average knowledge were shown in a study conducted in Pokhara by Shrestha et al.¹². This study explained that there was a statistical significant association between the level of maternal awareness with educational status ($p < 0.001$) and family income ($p = 0.030$). This finding was supported by Adhikari et al.¹, which showed that there was a statistical significant association between the level of knowledge with education ($p = 0.003$), and monthly income ($p < 0.001$). Likewise, there was a statistically and significantly higher percent of satisfactory knowledge among highly educated mothers and those with the middle and high socioeconomic level reported in the study done by Mohamed et al.⁷. Similarly, the study by Aldoori and Abeed² reveals a quarter of the sample that had moderate knowledge and few of them had poor knowledge regarding the accident avoidance of kids under five as well as no correlation between mother's knowledge with their age and education. Findings are similar in the study done by Khan et al.⁶.

V. Conclusion

The study concluded that around half of the respondents had adequate awareness on home accident of toddlers. There was a significant association between the level of maternal awareness with educational status and family income. On the basis of these findings, it is suggested that educational programs about prevention of childhood accident to the mothers should be conducted by the concerned authorities and the focus should be provided to the mothers having basic education and insufficient family income.

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Sharada Sharma, Kiran Regmi. "Maternal Awareness on Home Accidents of Toddlers: A Study of Putalibazar Municipality, Syangja District, Nepal." *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 9(6), 2020, pp. 54-61.