



Anticipatory Guidance in Childhood Safety: How do Parents Fare? A Survey from a Tertiary Hospital

Kishore Narayan¹, Daniel Paul Pragasam¹, P. Kesavaraj¹, Bamma Sujatha^{1*} and S. Rajesh¹

¹Department of Paediatrics, Saveetha Medical College and Hospital, Thandalam, Kancheepuram, Pincode 602105, India.

Authors' contributions

This work was carried out in collaboration among all authors. Authors KN and BS designed and questionnaire preparation, preparing manuscript, statistical analysis wrote the protocol and wrote the first draft of the manuscript. Authors PK and DPP managed the literature searches. Author SR managed the analyses of the study. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2021/v33i47B33220

Editor(s):

(1) Dr. Rafik Karaman, Al-Quds University, Palestine.

Reviewers:

(1) Preeti Lata Rai, Shri Rammurti Smarak Institute of medical sciences, India.

(2) RAKESH KOTHA, Niloufer Hospital, India.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/75496>

Original Research Article

Received 15 August 2021

Accepted 21 October 2021

Published 05 November 2021

ABSTRACT

Unintentional home injuries are a major cause for childhood morbidity and mortality.

Aims and Objective: To find the KAP among mothers about common home injuries and methods to prevent them. To assess how safe the houses of the study population is.

Materials and Methods: 200 mothers attending the paediatric OPD of a tertiary care hospital in a sub-urban area of South India were enrolled. They were interviewed with a structured questionnaire. Details regarding socio-demographic aspects, knowledge, attitude and practices about common household accidents and ways to prevent were asked. The safety aspects of their homes were also noted down. The collected data were analysed with sigma plot 13(system software, USA). In the above statistical tools the probability value <0.05 was considered as significant.

Result: The mean age of mother was 28.82 ± 4.93 years and age at marriage, 21.7 ± 3.55 years. 54% belonged to lower middle class and nearly 20% each in upper lower and upper middle class. Fall from height, Road traffic accidents followed by electrical injuries were the commonest

accidents known by mothers. Socioeconomic status and educational levels had statistical correlation with few of the variables.

Conclusion: Knowledge about home accidents is poor in the study population. Most of the houses are not child safe. Parent education about home injuries and training on first aid should be part of newborn follow up.

Keywords: Childhood accidents; educational status; home injury; home safety; socio-economic status.

1. INTRODUCTION

A safe and healthy environment is of utmost importance for children for their healthy growth and development. Children are susceptible and vulnerable to injuries due to their physical size, difficulty in risk perceptions, impulsivity and risk taking behaviours. There are myriads of way that children can meet with an unintentional injury at home. According to a report released by NIMHANS on "Advancing Child safety in India" [1] about 165 children die every day due to unintentional injury. Most of these injuries (around 60%) occur due to Road traffic accidents and the rest occur at home or school.

The common unintentional injuries occurring at home include fall from height, accidental ingestion of poisonous substance, drowning, electric shock, scalds, burns, cut injuries due to sharps, fall of heavy objects on children. Most of these injuries can be prevented by awareness of the problem and appropriate safety measures taken at home.

Hemalatha K et al. [2] in her study in rural population of Tamilnadu found home injuries to occur in 12.9% of the children. Most of the injuries occurred indoor and most were simple injuries, with laceration and cut injury being the commonest followed by scalds. Children of age 6-9 years were more prone to accidents.

Khan S et al. [3] in their study done at a sub urban area of Aligarh found a higher incidence of childhood accidents (64.4%). Most of the accidents occurred at home. Falls were the commonest accidents followed by Road traffic accidents, sharp injuries and scalds. Children of educated mothers were less prone for accidents in their study. Age and sex of child, mothers working status did not affect the home accidents significantly. In the study done by Sharma SL et al. [4] at an urban slum in Tamilnadu they found a prevalence of 39.1% of home injuries in children. In their study they found that accidents to occur more in overcrowded houses and in

children of working mothers. Falls, burns and RTA were the common injuries noted in the study period.

This study was planned to take a survey about the knowledge, attitude and practices regarding unintentional injuries occurring at home and their prevention by parents of children aged 0-14 years.

2. MATERIALS AND METHODS

After obtaining clearance from the Institutional Review Board, (SMC/IEC/2021/03/037) a prospective descriptive study was carried out from March 2021 to May 2021. After obtaining informed consent, mothers of children attending the paediatric OPD where interviewed. Their socio demographic details, knowledge about common house hold accidents, their attitude regarding the safety of their house and preparedness if an accident occurs at home and the steps they have taken to make their home safe to children were collected in a semi-structured questionnaire. Apart from this the details of their house with regards to safety like storage of sharps, medicine, inflammable items, water storage, access to terrace, balcony and main road were also collected. The socioeconomic status (SES) was graded based on Modified Kuppuswamy scale [5].

2.1 Inclusion Criteria

Mothers of children aged 0-14 years.

2.2 Exclusion Criteria

Mothers who did not give consent for the interview.

2.3 Data Analysis

For descriptive statistics, mean \pm SD was used for quantitative variables, while number and percentage were used for qualitative variables.

For analytic statistics, independent samples t-test and One-Way ANOVA test were used to assess differences in means of quantitative variables. A *p* value of < 0.05 was assumed as significant.

3. RESULTS

The mean age of mother and father was 28.82 ± 4.93 years and 33.58 ± 5.3 respectively. The mean age of marriage was 21.7 ± 3.55 and 26.7 ± 3.9 years respectively for women and men. Out of this 31 (15.5%) females got married before the age of 18 years. The education and job profile of the parents and Socio economic status and the type of house are depicted in Tables 1 & 2. Of the 200 respondents, 98 (49%) of the respondents had 1 child, 82 (41%) had 2 children and 20 (10%) had 3 children. The primary caretaker was the parent in 159 (79.5%) of the cases, 36 (18%) were looked after by the grandparents. Siblings and servants were the primary caretaker in 2 (1%) and 3(1.5%) families respectively.

Knowledge of parents regarding the common accidents and the steps that can be taken to prevent them are depicted in Table 3. Analysis

shows that the mother belonging to Upper middle and upper class were well aware of accidents than the mothers belonging to lower socioeconomic class and mother with lower educational status.

Attitude analysis shows that nearly 33% of respondents feel that accidents can occur at home and 55.5% are worried about it, 82.5% of them feel their house is safe. More than half of the respondents (63%) have talked about household accidents and 46% have had known personally of childhood accidents in the immediate family and surroundings. The common accidents that the respondents heard about are RTA, scalds, fall from height. Irrespective of social economic status and educational qualification nearly 80% of mothers feel their house is safe for their children. Mother belonging to higher social status and with higher educational qualification talked about childhood accidents than the rest of the mothers. 79.5% said they would take their child to hospital if accidents occurred and 33.5% responded that they would give first aid before taking to hospital. 18.5% responded by saying they would inform their spouse first.

Table 1. Education and working status of study population

Education	Mother	Working	Father	Working
Primary School	10	4	11	11
Secondary School	58	28	53	53
High School	63	15	61	61
Under Graduate	55	18	62	62
Post Graduate	14	10	13	13
	200	75	200	200

Table 2. Socioeconomic status and type of House

SE status	Nuclear Family 116 (58%)				Joint Family 84 (42%)			
	Individual home	Apartment	Hut		Individual home	Apartment	Hut	
Upper Lower (UL)(41)	11	6	6	23	15	0	3	18
Lower Middle (LM)(108)	35	18	9	62	34	7	5	46
Upper Middle (UM)(43)	13	10	3	26	11	5	1	17
Upper Class (UC)(8)	2	3	0	5	2	1	0	3
Total (200)	61	37	18	116	62	13	9	84

Table 3. Knowledge about common house hold accidents and ways to prevent them

Knowledge about common childhood accident	Responses	Knowledge about Practices that can prevent accident	Responses
Fall from height	158	Installing safety gates	110
Road Traffic Accident	100		
Electrical injuries	84	Electrical safety	66
Drowning	54	Closing water tanks and buckets	59
Cut injuries	67	Keeping sharps out of reach	80
Scalds	59	Monitoring children from coming into kitchen while cooking	116
Burns	40	Storing heavy objects close to ground	40
Television Cupboard falling	40	Keeping medicines and household acids out of reach	69
Accidental poisoning	53	Monitoring children when with pets	38
Bites	45		
Foreign body aspiration	40		
Accidental strangulation	9		

Table 4. Comparison of knowledge among mothers with home environment

Knowledge about accidents	Response	Unsafe Home environment	Response
Drowning	54	Water storage in tanks buckets, containers	150/200
TV cupboard falling on child	40	TV placed on table	113/192
Electrical injury	84	Plug points at less than 5 feet height	102/200
Accidental poisoning	53	Kerosene storage at sites which child could access	172/200
		Medicines storage at sites which child could access	47/57
Fall from height	158	Access to terrace	44/99
		Parapet wall <3 feet	53/99
		Balconies access	32/53
		Parapet wall < 3 feet	32/53
Cut injuries	67	Open kitchen	127
		Access to sharps	65
Burns	40	Open kitchen	127
Scalds	59		
Road traffic accidents	100	Access to main road	39/71
Bites	45	Unvaccinated pets	28/64

Table 5. Safety aspects of the respondents' home

Variables	Safe	Not safe
Kitchen	Closed: 73	Open: 127
Fuel	LPG: 190	Firewood:10
Bedroom	Separate: 145	Common: 55
Television	Wall mounted: 79	On Desk: 113
Plug point level	≥ 5 feet: 98	< 5 feet: 102
Terrace (99)	Not Accessible: 55	Accessible: 44
Height of parapet wall of terrace (99)	≥ 3 feet: 46	< 3 feet: 53
Balcony (53)	Not Accessible: 21	Accessible: 32
Height of balcony rail	≥ 3 feet: 21	< 3 feet: 32
Access to sharps	Not present: 135	Present: 65
Access to medicines (57)	Not present: 10	Present: 47
Storing inflammables	Not accessible: 28	Accessible: 172
Pets (64)	Vaccinated: 36	Not vaccinated: 28
Home opens to main road (71)	Cannot access road: 32	Can access road: 39
Water storage tanks and containers (150)	Covered: 135	Not covered: 15

Table 6. Comparison of knowledge with SES #UL: upper lower, LM: Lower middle, UM: Upper middle, UC: Upper class

S. No	Parameter	Category	Yes	No	Statistics
1	Fall from height	UL (41)	30	11	$\chi^2 = 7.671$ P = 0.053
		LM (108)	93	15	
		UM (43)	29	14	
		UC (8)	6	2	
2	Poisoning	UL (41)	8	33	$\chi^2 = 8.526$ P = 0.036
		LM (108)	25	83	
		UM (43)	15	28	
		UC (8)	5	3	
3	Cut injury	UL (41)	13	28	$\chi^2 = 1.132$ P = 0.769
		LM (108)	35	73	
		UM (43)	15	28	
		UC (8)	4	4	
4	Burns	UL (41)	12	29	$\chi^2 = 3.090$ P = 0.378
		LM (108)	19	89	
		UM (43)	7	36	
		UC (8)	2	6	
5	Drowning	UL (41)	8	33	$\chi^2 = 2.289$ P = 0.515
		LM (108)	29	79	
		UM (43)	14	29	
		UC (8)	3	5	
6	Scalds	UL (41)	6	35	$\chi^2 = 6.036$ P = 0.110
		LM (108)	34	74	
		UM (43)	16	27	
		UC (8)	3	5	
7	Bites	UL (41)	6	35	$\chi^2 = 4.051$ P = 0.256
		LM (108)	23	85	
		UM (43)	13	30	
		UC (8)	3	5	
8	Foreign body aspiration	UL (41)	4	37	$\chi^2 = 38.184$ P = <0.001
		LM (108)	16	92	
		UM (43)	12	31	
		UC (8)	8	0	
9	Strangulation	UL (41)	3	38	$\chi^2 = 2.696$ P = 0.441
		LM (108)	3	105	
		UM (43)	2	41	
		UC (8)	1	7	
10	TV falling	UL (41)	8	33	$\chi^2 = 0.320$ P = 0.956
		LM (108)	22	86	
		UM (43)	9	34	
		UC (8)	1	7	
11	Electrical injury	UL (41)	12	29	$\chi^2 = 7.0135$ P = 0.068
		LM (108)	45	63	
		UM (43)	21	22	
		UC (8)	6	2	
12	Road traffic accident	UL (41)	18	23	$\chi^2 = 3.559$ P = 0.313
		LM (108)	59	49	
		UM (43)	21	22	
		UC (8)	2	6	

Table 7. Comparison of SES with safety practice #UL: upper lower, LM: Lower middle, UM: Upper middle, UC: Upper class

S. No	Parameter	Category	Yes	No	Statistics
1	Keeping medicines under lock and key	UL (41)	13	28	$\chi^2 = 9.339$ P = 0.025
		LM (108)	31	77	
		UM (43)	19	24	
		UC (8)	6	2	
2	Storing sharps out of reach	UL (41)	15	26	$\chi^2 = 5.400$ P = 0.145
		LM (108)	45	63	
		UM (43)	14	29	
		UC (8)	6	2	
3	Storing heavy objects close to ground	UL (41)	8	33	$\chi^2 = 1.919$ P = 0.589
		LM (108)	22	86	
		UM (43)	7	36	
		UC (8)	3	5	
4	Installing safety gates	UL (41)	23	18	$\chi^2 = 1.035$ P = 0.793
		LM (108)	16	48	
		UM (43)	24	19	
		UC (8)	3	5	
5	Not storing water in buckets/ closing water tanks and buckets	UL (41)	10	31	$\chi^2 = 3.207$ P = 0.361
		LM (108)	29	79	
		UM (43)	17	26	
		UC (8)	3	5	
6	Not leaving pots and pans unattended on stove	UL (41)	18	23	$\chi^2 = 9.316$ P = 0.025
		LM (108)	64	44	
		UM (43)	26	17	
		UC (8)	8	0	
7	Electrical safety	UL (41)	8	33	$\chi^2 = 5.951$ P = 0.114
		LM (108)	36	72	
		UM (43)	18	25	
		UC (8)	4	4	

Analysing respondent's knowledge about common home accidents and the safety of their home are depicted in Table 4. We find that knowledge about home accidents and safety aspects of home do not match. Most of the respondent's home environment had issues that could lead to unintentional accidents. The safety features of the respondents' home environment are depicted in Table 5. Analysing the data on knowledge, attitude and practices based on SES and education, we found that there was not much significance. However mothers of higher SES and higher education had comparatively more knowledge, positive attitude and better safety practices at home Tables 6 & 7.

4. DISCUSSION

Literature review of childhood accidents and the KAP among parents did not yield many results in the Indian context. Most of the studies on childhood accidents are about prevalence of child hood accidents in particular locality and the safety issues of house and environment. The

present study is about how knowledgeable parents are about childhood accidents and their attitude and practices with regards to the same. The knowledge about accident is largely limited to falls and road traffic accidents. Though their household environment is prone to accidents, awareness is very low amongst the parents. Most of the household store water in buckets or small tanks; Place Television on tables, have an open kitchen allowing children to access sharps, inflammables and thereby making them prone to fire and scald injuries. Electrical plug points are at low levels in majority of the respondent's house. In houses with terraces and balconies, most of children are able to access them and the parapet walls heights are not according to standard heights prescribed. Storage of inflammables and medicines is another aspect in which most of the interviewees fail. A miniscule percentage only stores it under lock and key and rest say they keep it out of reach.

This lack of awareness could be due to not reading newspapers or not watching news on TV

or other social media. Almost every day there is news about RTA, accidental poisoning, fire, scalds and drowning but parents are not aware about it. With so many safety issues in the houses of the respondents a surprising 80% of them feel their house is safe for their children.

N Bhuvaneshwari et al. [6] did a study in Delhi. Their study was to find the prevalence of unintentional injuries in children and safety aspects of the home. They reported fall as the commonest injury followed by injuries by sharps and fire. The home was found not safe with regards to unsafe electrical points, unsafe stairs, and kitchens with access to sharps and fire. This is similar to the present study where the houses were not safe with regards to kitchen, plug points, access to inflammables and medicines. One more aspect we included was water storage. As in the present study area there is water scarcity throughout the year and most of the house-holds store water in buckets, tanks and other containers. This can lead to drowning due to lower centre of gravity in children.

G Gururaj et al. [7] in his letter to editor on injury prevention and care states that road traffic injuries in particular and other injuries are more common in lower socio economic group and the fatalities are also higher in this group. Non-fatal injuries are falls, burns and RTI and common cause for fatal injuries are RTI, drowning and suicides. He suggests strong policies, legislation, environment modification, capacity strengthening and human resources and public awareness and implementation of solution that are evidence based. The authors of this study feel that it should start at grass root level with education of mothers from antenatal period, during postnatal visits for immunization and during regular check-ups. The parents should be educated about child rearing and about common accidents that can occur at a home and ways to prevent them. In the present study also we find that mothers belonging to lower socioeconomic status have less knowledge and practices regarding home accidents and their prevention respectively.

Nour O M et al. [8]. In their study included mothers of children aged 2-6 years. The age range of mothers was from 20-40 comparable with the present study. The percentage of working mothers was comparable with 37% in the present study vs. 41.4% in their study. The comparison of educational levels of mother in both studies show the percentage with regards to University degree, high school and primary

being, and 34.5 and 57.6; 32 vs.32.9 and 34 vs.9.5 respectively. Mothers in both studies with higher educational status were more aware about childhood home accidents.

Comparing the present study with one done by Arturk U et al. [9] at Turkey we find that the mean age of the mothers to be similar (28.8 vs. 30.1years). Educational status and socioeconomic status positively correlated with knowledge and attitude in their study as well as the present study. Comparing the safety issues in both studies we find that access to sharps was more in Turkey study (66.2% vs.32.5%), storing water in buckets and other containers was more in the present study (75% vs. 50%), safety aspects while cooking were more positive in the present study with 58 % turning the handles in as compared to 40.4% in the Turkey study. Access to balcony when one was present is more in the present study (60.4%) as compared to (51.4%) to Turkey study. Storage of inflammables and poisonous substance the present study failed miserably with 86% of them not storing it safely. In the Arturk study 41.1% did not store them safely.

Comparing our study with the study conducted by Al- Hajj S et al. [10] in Lebanon, it is found that the respondents were slightly older than the present study population (32.7 vs.28.8 years). The education levels were also higher in their study with more than 56.9% having a university degree as compared to 34.5% in the present study. Working mothers were more as compared to present study (48.1 % vs 37.5%). The present study had more than 75% from the lower socioeconomic strata as compared to their study (30%). The knowledge, attitude and practices about childhood accidents compared favourably with higher education and socioeconomic status.

5. CONCLUSION

Children are the future of the country, it is our responsibility to nourish and protect them so that they become useful citizens of the country. The bringing up of children is such an important task which is being done with no formal training or knowledge by parents in general. It is believed it is a natural instinct and there is no need for any training. But the modern environment is very accident prone for children. So it becomes imperative to educate parents starting from the antenatal stage about child rearing, home safety, first aid for common childhood accidents along with nutrition advice and immunization. This

would reduce home accidents and help in bringing up healthy children with less strain to the hospital system.

CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

We conducted our research after obtaining proper SMC/IEC/2021/03/037 approval.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Gururaj G, Gautham MS. Advancing child safety in india - implementation is the key. Bengaluru. National Institute of Mental Health & Neuro Sciences, Publication Number: 161; 2019
2. Hemalatha K, Prabhakar VR. Prevalence of childhood injuries: A survey of injury epidemiology in rural population of Tamil Nadu, India. Journal of Medical Society. 2018;32(1):27.
3. Khan S, Tauheed N, Nawab S, Afzal S, Khalique N. Domestic accidents among under-5 year children: a study on the modern day epidemic. International journal of community medicine and public health (Gujarat). 2019;6(4):1529-35.
4. Sharma SL, Ramanujam K, Jennifer MS, Gunasekaran A, Rose A, John SM, Bose A, Mohan VR. Unintentional injuries among children aged 1–5 years: understanding the burden, risk factors and severity in urban Slums of Southern India. Injury epidemiology. 2018;5(1):1-0.
5. Saleem SM. Modified Kuppaswamy socioeconomic scale updated for the year 2020. Indian Journal of Forensic and Community Medicine. 2020;7(1):1-3.
6. Bhuvaneswari N, Prasuna J G, Goel M K, Rasania S K. An epidemiological study on home injuries among children of 0–14 years in South Delhi. India J Public Health 2018;62:4-9
7. Gururaj G. Injury prevention and care: an important public health agenda for health, survival and safety of children. The Indian Journal of Pediatrics. 2013;80(1):100-8.
8. Nour M, Alharbi W, Alawneh S, Al Ansari A, Al-Luqmani AD, Alharbi AF, Sonari MA, Al-Hassani HK, Al-Malki AH. Knowledge, Attitude and Practices of Mothers Towards Home Accident among Children, Makkah, KSA. European Journal of Pharmaceutical Medical Research. 2018;5(2):139-47.
9. Akturk Ü, Erci B. Determination of Knowledge, Attitudes and Behaviors Regarding Factors Causing Home Accidents and Prevention in Mothers with a Child Aged 0-5 Years. Journal of Education and Practice. 2016;7(18):142-53.
10. Al-Hajj S, El Haj R, Chaaya M, Sharara-Chami R, Mehmood A. Child Injuries in Lebanon: Assessing Mothers Injury Prevention Knowledge Attitude and Practices—A Cross Sectional Study; 2020.

© 2021 Narayan et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:

<https://www.sdiarticle4.com/review-history/75496>