Original article

Prevalence of domestic accidents among under-five children in urban field practice of Belagavi

Asha Anil Bellad[1], Ahamed Muqthar[1], Sriram T R[2]

[1]Department of Community Medicine, KAHER's Jawaharlal Nehru Medical College, Bealgavi, Karnataka, India
[2]Department of Community Medicine, Faculty of Medicine, Sri Lalithambigai Medical College and Hospital, Dr MGR Educational and Research Institute, Chennai, Tamil Nadu, India

Corresponding author: Dr Sriram T R, Senior Resident, Department of Community Medicine, Faculty of Medicine, Sri Lalithambigai Medical College and Hospital, Dr MGR Educational and Research Institute, Chennai

E-mail: ram20397@gmail.com

Citation: Bellad A A, Muqthar A, Sriram T R. Prevalence of domestic accidents among under-five children in urban field practice of Belagavi. Indian J Comm Health. 2026;38(5): Page Number 835-39 https://doi.org/10.47203/IJCH.2026.v38i05.016

Article Cycle: Received: 10/07/2026; **Accepted:** 15/09/2026; **Published:** 31/10/2026

Abstract

Background: Injuries among children is a preventable public health problem. Home accidents are the main cause of mortality and morbidity in early childhood and a major factor in lost productive life. This study aimed to determine the prevalence of domestic accidents and its association with socio-demographic factors. **Material and Methods:** A community-based cross-sectional study was conducted among 540 under-five children in an urban field practice area of Belagavi. Data was collected using a validated questionnaire from the parents or caretakers of the children. Data was entered into Microsoft Excel, and analyzed with IBM SPSS version 25. **Results:** Among the 540 under-five children studied, majority were in the age group 25-36 months (191, 35.4%), with more females (282, 52.2%). Majority belonged to SES Class III (201, 37.2%), with most parents having a secondary level education and were living in nuclear families. The prevalence of domestic accidents among under-five children was 135 (25%) in the preceding 3 months. Most common types of domestic injuries were due to fall from height (82, 60.7%). **Conclusion:** The study found a significant prevalence of domestic accidents among under-five children in an urban field practice area of Belagavi. Domestic accidents is a largely preventable public health problem. Community based interventions can play a key role in minimizing childhood accidents. Primary prevention through education, environmental modification and targeted support to high-risk families should be carried out. Strengthening caregiver awareness, improving supervision and promoting household safety measures are crucial to reduce these preventable injuries.

Keywords: unintentional injuries, under-five children, domestic accidents, falls, urban area

Introduction

Accidents and injuries among children are a significant public health challenge globally; children are vulnerable due to their developmental stage and dependency on adults.[1] Domestic accidents is a blanket term that includes all unintentional injuries occurring at home, such as burns, falls, poisoning, drowning, and other incidents.[2] Domestic accidents lead to significant morbidity, mortality, disability, healthcare costs, and also the added emotional burden on families.[3] Especially in urban areas various factors including rapid changes in housing patterns, unplanned, informal settlements, smaller living spaces, increased population density, increased use of modern appliances, introduce new hazards. Additionally, the increasing trend of both parents working further increases the likelihood of accidents, where the children are often left without any adult supervision.[4]

According to the "World Health Organization" (WHO), around 8 million children die annually from unintentional injuries, with millions more sustaining non-fatal injuries that often result in long-term disabilities. The injury-specific mortality rate in the under-five age group was 73 per 100,000 population.[5] In Karnataka, it is estimated that at least 30,000 children die annually due to accidents, drowning, and poisoning; around 11.89% of all deaths are attributed to accidents.[6]

Apart from physical harm, domestic accidents have profound psychological, emotional and economic impacts on the affected families.[7] For some children the accident may have a lifelong effect, impacting their growth and quality of life.[8] Because of these reasons, understanding the epidemiology of domestic accidents among under five becomes a critical public health priority.[9]

The present community-based cross-sectional study aimed to elucidate the prevalence of domestic accidents among under five children and its association with socio-demographic characteristics within an urban field practice area of Belagavi. By systematically identifying the frequency and types of accidents, the study aims to provide evidences that can inform the development of targeted interventions in preventing

mishaps and educating the parents and caretakers. Ultimately the insights generated through this research have potential to reduce the burden of childhood injuries in urban locals, to improve healthier and safer environments for children during their formative years.

Material and Methods

Study design: A community-based cross-sectional study.

Source of data: Data was collected from the parents or caretakers of under five children residing in urban field practice area of Ashok Nagar Urban Health Center (UHC) in Belagavi.

Study period: One year, from April 2024 to March 2025.

Inclusion Criteria: Under 5 children in the selected households in the urban field practice area of Ashok Nagar UHC, residing since last 12 months.

Exclusion Criteria: Selected houses of under five children which were locked after 3 consecutive visits.

Sample size calculation: Sample size was calculated using the formula, where, N = Population size, p = prevalence, d =Error,z (α⁄2) = critical value, N = under (<5) children = 3690, p = 22.1% [1] d= 15 % of p = 0.15 x 22.1 = 3.315. For 95% confidence, z_ (α⁄2) = 1.96 ≃ 2 n = 535.8 ≃ 536 rounding off to 540.

Data Collection Procedure: The list of under-five children and their addresses were collected from all Anganwadi centers under Ashok Nagar UHC. After assigning numbers to each child, households were chosen through computer-generated random sampling. Informed consent was obtained from parents or caregivers prior to data collection. A predesigned, pretested questionnaire assessed sociodemographic details and domestic accidents.

Questionnaire Validation: For the overall reliability, the questionnaire was internally validated using Cronbach's alpha. For the overall reliability, the Cronbach's alpha value was 0.8.

Statistical Analysis: The collected data were entered into an MS Excel sheet and analyzed using IBM SPSS software. Quantitative data were summarized using percentages and rates. To assess the association between variables, the Chi-square test was applied.

Ethical approval: The study was approved by the Institutional Ethics Committee: Ref.no.MDC/JNMCIEC/104. All patient data were anonymized and confidentiality maintained.

Results

Among the 540 under-five children studied, majority were in the age group 25-36 months (35.4%), with more females (52.2%). Majority belonged to SES Class III (37.2%), with most parents having a secondary level education and were living in nuclear families (Table 1). One in four children had experienced at least one domestic accident in the preceding three months, with most events occurring only once during this period. Falls from height were the predominant mechanism, accounting for about three-fifths of accidents, followed by injuries due to sharp objects and burns. Head, face and upper limbs were the common sites of injury. Contusions, abrasions and lacerations formed the bulk of injury types, with fractures reported in a smaller proportion (Table 2).

Table 1: Socio-demographic characteristics (n=540)

Variable	Frequency	Percentage
Age group (in months)		
12-24	69	12.8
25-36	191	35.4
37-48	140	25.9
49-59	140	25.9
Gender		
Male	258	47.8
Female	282	52.2
Religion		
Hindu	264	48.9
Islam	263	48.7
Christians and others	13	2.4
SES of the family		
Class I	54	10
Class II	199	36.9
Class III	201	37.2
Class IV	75	13.9
Class V	11	2
Type of family		
Nuclear Family	190	35.2
Joint Family	161	29.8
Three generation Family	188	34.8
Broken Family	1	0.2
Parental Status		
Both are alive	531	98.3
Only mother	8	1.5
Parents are divorced	1	0.2
Education of father		
No Formal Education	15	2.8
Primary	56	10.4
Secondary	288	53.3

Post-Graduate	31	5.7
Education of mother		
No Formal Education	24	4.4
Primary	66	12.2
Secondary	278	51.5
Collegiate	157	29.1
Post-Graduate	15	2.8
Number of siblings		
0	168	31.1
1	217	40.2
2	121	22.4
3	26	4.8
> 4	8	1.5

Socio-economic status:

I (Upper): ≥ 9414

II (Upper middle): 4707 - 9413

III (Middle): 2824 - 4706

IV (Lower middle): 1412 - 2823

V (Lower): < 1412

Table 2: Details regarding the domestic accidents (n=540)

Variable	Frequency	Percentage
Domestic accident in the last 3 months		
Yes	135	25
No	405	75
Frequency of domestic accident in the last 3 months		
1	106	78.5
2	26	19.3
3	3	2.2
Type of accident		
Fall from height	82	60.7
Sharp object injury	17	12.6
Burns	10	7.4
Electrocutions	1	0.7
Aspiration	4	3
Animal Bite	3	2.2
Hit against object	18	13.3
Site of injury		
Head	57	42.2
Face	11	8.1
Head & Face	21	15.6
Upper Limb	29	21.5
Lower Limb	16	11.9
Internal Injury	1	0.7
Type of injury		
Bruises	12	8.9
Abrasions	29	21.5
Burns	11	8.1
Cuts	15	11.1
Lacerations	20	14.8
Fractures	9	6.7
Contusions	35	25.9
Other	4	3

The occurrence of domestic accidents was significantly higher among 49-59 months old children, children with one or more siblings, those from lower socioeconomic classes and those whose parents, especially mothers, had lower educational attainment. No statistically significant association was observed with gender or religion (Table 3).

Table 3: Association between socio-demographic characteristics of children and occurrence of domestic accidents in the last three months

Variables	Met any accident in the last three months		Chi-square (p-value)
	Yes	No	
Age of children (in months)			
12-24	9 (13)	60 (87)	8.386 (0.01)*
25-36	48 (25.1)	143 (74.9)	
37-48	34 (24.3)	106 (75.7)	
49-59	44 (31.4)	96 (68.6)	
Gender			
Male	69 (26.7)	189 (73.3)	0.802 (0.371)
Female	66 (23.4)	216 (76.6)	
Religion			
Hindu	69 (26.1)	195 (73.9)	1.896 (0.388)
Islam	61 (23.2)	202 (76.8)	
Christianity	5 (38.5)	8 (61.5)	
Number of siblings			
0	21 (12.5)	147 (87.5)	**20.616 (0.01)***
1	65 (30)	152 (70)	
2	38 (31.4)	83 (68.6)	
3	8 (30.8)	18 (69.2)	
4	3 (37.5)	5 (62.5)	
Education of father			
No formal education	4 (26.7)	11 (73.3)	**20.479 (0.01)***
Primary	25 (44.6)	31 (55.4)	
Secondary	73 (25.3)	215 (74.7)	
Collegiate	32 (21.3)	118 (78.7)	
Post-graduate	1 (3.2)	30 (96.8)	
Education of mother			
No formal education	8 (33.3)	16 (66.7)	**22.365 (0.01)***
Primary	26 (39.4)	40 (60.6)	
Secondary	78 (28.1)	200 (71.9)	
Collegiate	22 (14)	135 (86)	
Post-graduate	1 (6.7)	14 (93.3)	
Socio-economic status			
1	9 (16.7)	45 (83.3)	**14.817 (0.01)***
2	42 (21.1)	157 (78.9)	
3	50 (24.9)	151 (75.1)	
4	28 (37.3)	47 (62.7)	
5	6 (54.5)	5 (45.5)	
Type of family			
Nuclear	37 (19.5)	153 (80.5)	**0.029***
Joint	57 (35.4)	104 (64.6)	
Three-generation	40 (21.3)	148 (78.7)	
Broken	1 (100)	0	

In the present study, age of the child and number of siblings were significantly associated with domestic accidents among

children under five years of age. Children aged 25-36 months had significantly higher odds of accidents compared with those aged 12-24 months in both unadjusted (UOR=2.238, 95% CI: 1.033-4.848; p=0.041) and adjusted analysis (AOR=2.824, 95% CI: 1.220-6.537; p=0.015). Similarly, children aged 49-59 months had higher odds of accidents in the unadjusted analysis (UOR=3.056, 95% CI: 1.392-6.707; p=0.005) and remained significant after adjustment (AOR=2.771, 95% CI: 1.188-6.461; p=0.018). The number of siblings showed a strong association with domestic accidents. Compared with children with no siblings, those with one sibling had significantly higher odds of accidents in both unadjusted (UOR=2.993, 95% CI: 1.741-5.141; p=0.001) and adjusted analyses (AOR=3.293, 95% CI: 1.836-5.907; p=0.001). Similar significant associations were observed among children with two siblings (UOR=3.205, 95% CI: 1.746-5.822; p=0.001; AOR=3.060, 95% CI: 1.580-5.923; p=0.001) and three siblings (UOR=3.111, 95% CI: 1.203-8.045; p=0.019; AOR=3.250, 95% CI: 1.142-9.246; p=0.027). Although children with four siblings had increased odds, the association was not statistically significant (UOR=4.200, 95% CI: 0.935-18.872; p=0.061; AOR=4.695, 95% CI: 0.873-25.248; p=0.072), with wide confidence intervals suggesting imprecision.

Sex, religion, parental education and socioeconomic status were not significantly associated with domestic accidents after adjustment. Notably, some associations observed in the unadjusted analysis, such as higher odds among children with postgraduate-educated fathers (UOR=0.092, 95% CI: 0.009-0.912; p=0.042), mothers with collegiate education (UOR=0.326, 95% CI: 0.125-0.852; p=0.022), and higher socioeconomic status (SES 4: UOR=2.979, 95% CI: 1.267-7.004; p=0.012; SES 5: UOR=6.000, 95% CI: 1.501-23.991; p=0.011) were no longer statistically significant after adjustment. This suggests that these crude associations may have been influenced by other covariates in the model (Table 4).

Table 4: Adjusted and un adjusted Odds ratio of accidents met using binary logistic regression

Variables	UOR	95% CI	P-Value	AOR	95% CI	P-value
Age Of Children						
12 24	Ref					
25-36	2.238	(1.033,4.848)	0.041*	2.824	(1.220,6.537)	0.015*
37-48	2.138	(0.961,4.759)	0.063	1.779	(0.747,4.236)	0.193
49-59	3.056	(1.392,6.707)	0.005*	2.771	(1.188,6.461)	0.018
Sex of Child						
Male	Ref					
Female	0.837	(0.567,1.236)	0.371	0.739	(0.480,1.137)	0.169
Religion						
Hindu	Ref					
Islam	0.853	(0.574,1.269)	0.434	0.674	(0.429,1.059)	0.087
Christianity	1.766	(0.559,5.582)	0.333	2.496	(0.719,8.662)	0.15
No of Sibilings						
0	Ref					
1	2.993	(1.741,5.141)	0.001*	3.293	(1.836,5.907)	0.001*
2	3.205	(1.746,5.822)	0.001*	3.06	(1.580,5.923)	0.001*
3	3.111	(1.203,8.045)	0.019*	3.25	(1.142,9.246)	0.027*
4	4.2	(0.935,18.872)	0.061	4.695	(0.873,25.248)	0.072
Education of father						
No formal education	Ref					
Primary	2.218	(0.629,7.817)	0.215	2.532	(0.630,10.165)	0.19
Secondary	0.934	(0.288,3.023)	0.909	1.118	(0.319,3.913)	0.862
Collegiate	0.746	(0.223,2.499)	0.634	1.497	(0.388,5.770)	0.558
Post-graduate	0.092	(0.009,0.912)	0.042*	0.182	(0.008,4.307)	0.291
Education of mother						
No formal education	Ref					
Primary	1.3	(0.487,3.470)	0.6	1.024	(0.325,3.226)	0.967
Secondary	0.78	(0.321,1.896)	0.583	0.995	(0.355,2.791)	0.993
Collegiate	0.326	(0.125,0.852)	0.022	0.422	(0.128,1.395)	0.157
Post-graduate	0.143	(0.016,1.288)	0.083	1.013	(0.40,25.483)	0.994
Socio Economic Status						
1	Ref					
2	1.338	(0.606,2.955)	0.472	0.903	(0.368,2.219)	0.824
3	1.656	(0.756,3.626)	0.207	0.872	(0.342,2.226)	0.775
4	2.979	(1.267,7.004)	0.012*	1.287	(0.452,3.660)	0.636
5	6.000	(1.501,23.991)	0.011*	1.647	(0.329,8.252)	0.544

*p- value <0.05

Discussion

The present study demonstrates a substantial burden of domestic accidents among 540 under-five children in an urban field practice area of Belagavi, with one in four children having a domestic accident in the preceding three months.

This prevalence (25%) is similar to a study from Mysuru that reported a one year prevalence of accidents among under five children as 22.1%, suggesting that the burden in urban Karnataka remains consistently high across different cities despite contextual differences.[6] A study from Nepal has also reported a similar prevalence- 23.2%.[10] A study in Rishikesh reported 16% one-year prevalence of unintentional injuries from urban settlements. This is lower than the current study's finding; the reason for this may be because they used a 12 month recall period and included both home and non home settings.[7]

The pattern of injuries in this study, with falls from height as the leading mechanism (60.7%), is similar to other studies that identify falls as the predominant cause of unintentional injuries among under five children.[11,12]

Sociodemographic correlates in this study reinforce the role of social determinants in childhood injury risk. Domestic accidents were significantly more common among children from lower socioeconomic status, higher number of siblings which may cause overcrowding and households where parents, especially mothers, had lower levels of formal education.[13,14] With respect to age distribution, the present study showed higher accident occurrence among older preschoolers (25-36 months) compared with younger children, which is consistent with the developmental trajectory of increasing mobility, curiosity, and independent exploration.[15,16]

Interestingly, though numerous reports describe a male preponderance in child injuries, this study did not find a statistically significant gender difference, despite slightly higher proportions among boys. This may indicate that in dense urban environments, both boys and girls share similar environmental risks and supervision gaps. Children living in joint families experienced the highest proportion of accidents (35.4%). This is similar to other studies that explain reasons like higher number of children in same household making supervision difficult, old multi-level homes lacking modern safety features, lack of proper division of responsibility among multiple adults, and adherence to outdated traditional safety practices by grandparents.[17]

The present study has several strengths, including a community based design, a large sample size, and the use of a validated questionnaire with good internal consistency (Cronbach's alpha 0.8). However, certain limitations must be acknowledged. The reliance on caregiver recall over a three month period may still be prone to under reporting of minor injuries. The cross sectional design precludes causal inference, and the findings from a single urban field practice area may not be fully generalizable to other urban or rural settings, which may have different environmental and socio cultural profiles.

Conclusion

The study found a substantial prevalence of domestic accidents among under-five children in an urban field practice area of Belagavi. Domestic accidents is a largely preventable public health problem. Community based interventions can play a key role in minimizing childhood accidents. Primary prevention through education, environmental modification and targeted support to high-risk families should be carried out. Strengthening caregiver awareness, improving supervision and promoting household safety measures are crucial to reduce these preventable injuries.

Financial Support and sponsorship: Nil

Conflict of Interest: There is no conflict of interest.

Declaration of Generative AI and AI assisted technologies in the writing process: None

References

1. Peden M, Oyegbite K, Ozanne-Smith J, Hyder AA, Branche C, Rahman AKMF, Rivara F, Bartolomeos K, editors. World Report on Child Injury Prevention. Geneva: World Health Organization; 2008. PMID: 26269872.
2. de Ramirez SS, Hyder AA, Herbert HK, Stevens K. Unintentional injuries: Magnitude, Prevention, and control. Annu Rev Public Health. 2012;33:175-91. 10.1146/annurev-publhealth-031811-124558.
3. Bhanderi D, Choudhary S. A study of occurrence of domestic accidents in semi-urban community. Indian J Community Med. 2008;33:104. 10.4103/0970-0218.40878
4. Sharma SL, Reddy N S, Ramanujam K, Jennifer MS, Gunasekaran A, Rose A, et al.

   Unintentional injuries among children aged 1-5 years: understanding the burden, risk factors and severity in urban slums of southern India. Inj Epidemiol [Internet]. 2018 Nov 5;5(1):41.
5. Peden M. World report on child injury prevention appeals to keep kids safe. Inj Prev. 2008;14:413-4. 10.1136/ip.2008.020693
6. Krishnamurthy, K. V.; Murthy, M. R. Narayana; Kulkarni, Praveen; Shree, Amogha; Gopi, Arun. A Study on the Prevalence of Accidents among Under-Five Children in an Urban Field Practice Area of Mysuru. Indian Journal of Medical Specialities 12(1):p 25-30, Jan-Mar 2021. | DOI: 10.4103/injms.injms_125_20
7. Ajun UN, Sinha S, Saxena V, Sriram S, Hariprasad null, Salam A. Prevalence of unintentional injuries and its risk factors among under-five children residing in urban poor resettlements in Rishikesh. J Family Med Prim Care. 2024 Aug;13(8):2999-3004.
8. Karan S, Nandi K, Pandit L. Assessment of Facilitating Factors and Barriers Faced by the Mothers for Prevention of Home Accidents among Preschool Children: A Comparative Study in Selected Urban and Rural Community of West Bengal. Indian Journal of Holistic Nursing (ISSN: 2348-2133) [Internet]. 2022 Mar 31;13(1):14-22.
9. Bhatia J, Singh MM, Marimuthu Y, Garg S, Sharma P, Rajeshwari K. Unintentional Injuries Among Under-five Children in a Rural Area in Delhi. Indian Pediatr. 2021 Jun 15;58(6):560-3.
10. Bhatta S, Mytton JA, Deave T. Assessment of home hazards for non-fatal childhood injuries in rural Nepal: a community survey. Inj Prev. 2021;27(2):104-110. doi:10.1136/injuryprev-2019-043482
11. Singla P, Sanchaya S, Devgan S, Bhatia R, Aggarwal R. Profile of Unintentional Injuries at the Household Level among Under-Five Children in Faridkot, India: An Urban-Rural Comparison. J Social Behav Communit Health 2025; 9 (2) :1634-1641
12. Usha Rani S, Swetha R. Pattern of Domestic Accidents among Children in Tumkur City - A Cross Sectional Study. Natl J Community Med [Internet]. 2020 May 31 [cited 2026 May 9];11(05):196-200. Available from: https://njcmindia.com/index.php/file/article/view/281
13. Khan Z, Kumar A, Khan IM, et al. Domestic accidents among under-5 year children in peri-urban Aligarh: a community-based study. Int J Community Med Public Health. 2019;6(4):1471-6
14. Sheriff, A., Rahim, A., Lailabi, M. P., & Gopi, J. (2011). Unintentional injuries among children admitted in a tertiary care hospital in North Kerala. Indian journal of public health, 55(2), 125-127.
15. Kafle B, Yadav UN, Marahatta SB, Mishra D, Pant ND. Unintentional Injuries

   among Under-Five Children in Mid- Western Nepal. Journal of Nepal Paediatric Society [Internet]. 2018 Nov 19;38(1):46-52.
16. Chaudhari VP, Srivastava RK, Moitra M, Desai VK. Risk of domestic accidents among under five children. The Internet Journal of Family Practice [Internet]. 2008 Dec 31;7(1).
17. Tripura K, Das R, Datta SS, Bhattacharjee P, Singh B. Prevalence and management of domestic injuries among under five children in a peri-urban area of Agartala, Tripura. The Health Agenda. 2015 Apr 12;3:41-5.