



**International Journal of Biology, Pharmacy  
and Allied Sciences (IJBPAS)**

*'A Bridge Between Laboratory and Reader'*

[www.ijbpas.com](http://www.ijbpas.com)

---

**THE EFFECT OF NURSE LED INTERVENTION ON MOTHER'S BEHAVIOUR  
REGARDING PREVENTION OF HOME ACCIDENTS BASED ON PROTECTION  
MOTIVATION THEORY AMONG UNDER FIVE CHILDREN: TRIAL PROTOCOL  
FOR A PRAGMATIC RANDOMIZED CONTROLLED STUDY**

**JOSHI B<sup>1\*</sup> AND SHARMA A<sup>2</sup>**

**1:** Assistant Professor

**2:** Professor

Manikaka Topawala Institute of Nursing, Charotar University of Science and Technology  
(CHARUSAT), CHARUSAT campus, Changa 388421, India

**\*Corresponding Author: Ms. Binal Joshi: E Mail: [binaljoshi.nur@charusat.ac.in](mailto:binaljoshi.nur@charusat.ac.in)**

Received 26<sup>th</sup> June 2025; Revised 10<sup>th</sup> Aug. 2025; Accepted 12<sup>th</sup> Nov. 2025; Available online 1<sup>st</sup> Aug. 2026

<https://doi.org/10.31032/IJBPAS/2026/15.8.10376>

**ABSTRACT**

**Background:** Home accidents are significant contributors to both death and long-term disability among under five children, accounting for a large loss of productive life. Public health specialists have developed the phrase "Modern Day Epidemics" to explain the prevalence of home accidents in this age group because under five children are naturally explorative. Mothers serve as the primary caregivers and play a vital role in ensuring the safety of young children. Their awareness, supervision, and prompt responses can significantly reduce the risk of home accidents. Educated and vigilant mothers are better equipped to identify hazards and implement preventive measures. Therefore, the aim of this protocol paper is to assess and enhance maternal behaviour regarding home safety, with the ultimate goal of reducing the incidence of home accidents among children under five.

**Methods:** The study will be conducted as a pragmatic two-arm randomized controlled trial to evaluate the effectiveness of an intervention aimed at reducing home accidents among children under five. The protocol for this trial has been developed in accordance with the SPIRIT (Standard Protocol Items: Recommendations for Interventional Trials) guidelines to

ensure methodological rigor and transparency. The primary outcome of the study is the level of maternal behaviour related to home accident prevention, which will be assessed using a structured knowledge questionnaire and a researcher-developed five-point Likert scale. These tools are grounded in the Protection Motivation Theory, providing a theoretical basis for understanding and measuring behavioural change. Data analysis will involve comparing outcomes between the intervention and control groups to determine the effectiveness of the intervention in enhancing maternal safety practices and ultimately reducing the incidence of home accidents in young children.

**Conclusion:** Findings of the study will provide data with regard to the effectiveness of nurse-led interventions that focus on the prevention of home accidents among children who are under five years of age on mother's behaviour.

**Trial registration:** CTRI/2024/06/068719

**Keywords:** Nurse led Intervention, Home accidents, Mother's behaviour, Protection motivation theory

## INTRODUCTION:

Home accidents are among the leading causes of death and disability in children worldwide, especially in those under five years of age [1]. As these children undergo rapid stages of physical and cognitive development, they naturally engage in exploratory behaviours will promote young children to injuries [2, 3, 7]. In reality, the home environment can present numerous hazards for young children, including unprotected electrical outlets, unsafe storage of chemicals, unsecured furniture, open fires, water tanks, sharp tools, and unsafe play spaces [4, 5]. These factors are even more prevalent in low and middle-income countries such as India, where home environments are often not childproofed and caregivers may not have

adequate knowledge of injury prevention [6, 8].

The World Health Organization (WHO) has identified injuries remain leading factors responsible for death and disability [9]. Among these, home accidents—falls, burns, drowning, suffocation, cuts, and poisoning—represent a large fraction of injury [10]. In the Indian context, the burden of unintentional injuries is compounded by factors such as poverty, lack of awareness, overcrowding, and limited access to healthcare and education [11, 12].

Mothers, typically the primary caregivers, play a pivotal role in ensuring the safety of young children at home. Their knowledge, attitudes, and practices significantly influence injury risks. However, studies have consistently shown that many mothers

have limited awareness of the dangers present in their homes or lack confidence in implementing safety measures [8].

Interventions that empower mothers with knowledge and practical strategies are essential to reduce preventable injuries. Nurse-led interventions, in particular, offer a viable and impactful strategy to address this gap [2, 9, 13-16].

Studies has shown that nurse-led education significantly improved knowledge and behaviour related to child injury prevention [17-21]. In the context of home accident prevention, PMT based multiple behavioural These interventions have matured into strategic health-promotion tools employed in the prevention of numerous public health problems [22-24].

Home accidents are a significant yet preventable public health concern among under-five children in India. Enhancing awareness and promoting behavioural change among rural mothers is essential for the effective prevention and control of home accidents. Structured educational interventions that equip mothers with the knowledge and motivation to implement safety measures are urgently needed. This study, guided by Protection Motivation Theory and delivered through nurses, aims to reduce home injuries and contribute to evidence-based child safety strategies in low-resource settings.

## **Aim**

The objective of the study is to evaluate the impact of a nurse-led intervention on mothers' behaviour in preventing home accidents among under-five children. The evaluation will have focus on improvements in knowledge related to the prevention of home accidents, changes in perceived severity, perceived vulnerability, response efficacy, self-efficacy, and perceived response cost. These outcomes will be assessed at three time points: before the intervention, immediately after the intervention, and four weeks' post-intervention.

The other objective of the study is to explore and describe implementation of nurse led interventional programme on prevention of home accidents and the participants' experiences and perspectives on the intervention in a process evaluation.

## **Study design**

A randomized controlled, Single center, prospective, single blinded trial with two parallel arms will be employed for study with equal 1:1 allocation ratio to experimental and control group designed to evaluate the applicability and feasibility of a nurse-led intervention delivered to the mothers of under-five children. After the intervention, a mixed-methods approach will be utilized as process evaluation to examine the feasibility of key elements of the intervention. The study is presented in line with the SPIRIT guidelines.

### Study setting

Study participants would be mothers of under five children recruited from the selected rural community areas of Bandhani, Piplav and Sihol village of Anand district, Gujarat. Researcher had already communicated with medical officer, MPHW and Asha worker of the designated Primary health care centres to facilitate data collection process. Prior permission is taken from concerned authorities for data collection process

### Sample Size

Based on prior research study sample size has been calculated. The estimation was informed by findings from a similar study that reported a mean behaviour score of  $25.71 \pm 3.20$  in the intervention group and  $23.86 \pm 3.01$  in the control group after an educational intervention [25, 26]. To determine the appropriate sample size, a two-sided hypothesis test was used with a confidence level of 95% ( $\alpha = 0.05$ ) and power of 80% ( $\beta = 0.20$ ). The sample size is 45 per group. To account for potential dropout or loss to follow-up, the sample size was rounded to 60 per group, resulting in a total of 120 participants (60 in the intervention group and 60 in the control group).

### Criteria for participant eligibility

Following criteria will be considered to enrol participants in the study (1) Mothers with at least one child under the age of five

years. (2) At least one self-reported home accidents (3) Mothers who give the consent to participate in the study (4) Mothers registered under PHC/CHC at least from last 6 months. However, participants will be excluded based on the following criteria: (1) Mothers who are unavailable during the data collection period (2) Mother has other serious illnesses deemed unsuitable for participation in this study (3) Unable to complete follow-up. (4) Mothers who are currently enrolled in other intervention studies. (5) mother who has no access to a mobile phone.

### Recruitment and screening

Recruitment of participants will be carried out from the community area of Bandhani, Piplav and Sihol area of Anand district. Eligible participants will be approached by the researcher at the site and informed thoroughly about the study's background and purpose. If they are willing to participate, baseline information will be collected to assess eligibility. Informed consent will be obtained from eligible participants at this stage approved by IEC/CHARUSAT/22/118 (Figure 1).

### Randomization, allocation and blinding

After study participant recruitment, informed consent and completion of baseline screening, Study participants will be allocated randomly to either the intervention group (receiving the intervention on the prevention of home

accidents) and the control group. An independent researcher will carry out randomization who is not involved in any other aspect of the study. A combination of stratified and block randomization will be used to assign 120 participants. Stratification will be based on the study setting area. Within each stratum, block randomization will be applied, utilizing 12 blocks with a block size of 12 participants per block. The block randomization sequence will be generated using an online tool (sealedenvelope.com). An independent researcher will prepare opaque, sealed envelopes containing the allocation sequence. After obtaining informed consent from a participant, the principal investigator will open the next envelope in the sequence corresponding to the appropriate block to assign the participant to their respective group.

**Allocation ratio:** One to one allocation ratio will be used for the study. Since the block size will be 12 and one to one allocation ratio was used, every block will be consisted of 6 subjects in each group (experimental = 6, control =6) Participants will not be blinded to the assigned group. Due to the nature of the multicomponent intervention, blinding of participants and the research interventionist will not be feasible. Therefore, the study will be designed as a single-blinded trial. The outcome assessor will be blinded to the

participants' group allocation to minimize bias. This approach will be particularly important, as the outcomes being measured were subjective in nature.

### Intervention

The intervention will be implemented as a nurse-led program titled "*Prevention of Home Accidents Among Under-Five Children Based on Protection Motivation Theory.*" The primary objective is to improve mothers' behaviour in terms of knowledge related to the prevention of home accidents, changes in perceived severity, perceived vulnerability, response efficacy, self-efficacy and perceived response cost. related to the prevention and management of home accidents through a structured, theory-based approach guided by the Protection Motivation Theory. (PMT) [20-27].

### Intervention delivery:

The intervention will be delivered to the subjects by the principal investigator. The **duration** of the Nurse led intervention will be for **four weeks**. It will be delivered through

1. Meeting one-to-one, face-to-face contact session for five hours during first four days. Details of Meeting one-to-one, face-to-face contact session for five hours during first five days will be as Four contact programs for five hours during four days. Frequency of the

contact programme will be **once (Figure 2).**

2. Non meeting intervention duration for next 25 days  
Reinforcement methods included: a)  
Distribution of a workbook titled “Little steps to Big Safety: A Parent safety guide”. Each mother received a colour-illustrated workbook designed in a simple, engaging format, containing: Educational content, Interactive tasks, Home safety checklists and Reflective and practical exercises for continued learning at home b) Return demonstrations of first aid techniques during follow-up visits to assess skill retention and correct application. Primary investigator will see and promote participants' adherence to the intervention protocol.

**Control arm:** The subjects in the control arm will not receive the nurse led intervention

Table 1: Session-Wise Details with PMT Framework

| Session    | Objective                                                                                                     | Component / PMT Construct:                                | Duration   | Topic                                                                                                                                                                                                                                                                                                                                                                                                                  | Delivery                                                                                                                                                                       |
|------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Session 1  | To build foundational understanding among mothers regarding child development and common home accident risks. | Knowledge Enhancement (pre-cursor to cognitive appraisal) | 60 minutes | Explanation of child growth stages and developmental behaviours linked to accident vulnerability<br><br>Identification of accident-prone locations in the home (kitchen, bathroom, stairs, balconies, etc.).                                                                                                                                                                                                           | Use PowerPoint used to explain concepts visually.                                                                                                                              |
| Session 2: | To sensitize mothers to the seriousness of home accidents and their child's vulnerability.                    | Perceived Threat (Severity and Vulnerability)             | 45 minutes | Discussion on risk factors for different types of accidents.<br>Introduction to types of home accidents (falls, urns, poisoning, cuts, choking, rowning, etc.).<br>Emphasis on potential consequences (physical, psychological, and economic) of injuries.<br>Completion of workbook exercises:<br>Identification of threats in one's own home.<br>Reflective questions on how accidents might affect their own child. | Use of PowerPoint Presentation to support visual learning.                                                                                                                     |
| Session 3  | To instil confidence in mothers regarding the effectiveness of preventive measures and immediate responses    | Response Efficacy                                         | 45 Minutes | Education on preventive measures and low-cost, practical safety modifications in the home environment (e.g., stove guards, corner cushions, locking cabinets).<br>Discussion on first aid responses for common home accidents.                                                                                                                                                                                         | Workbook activities<br>Interactive Q&A session to clarify doubts and reinforce key concepts.<br>Individual counselling to discuss family-specific risks and strategies         |
| Session 4  | To empower mothers with hands-on skills and build confidence in managing home accidents                       | Self-Efficacy and response cost                           | 2 hours    | Demonstration of first aid techniques using manikins for:<br>Wounds and bleeding<br>Burns<br>Fall injuries<br>Mock drills simulating common household injury scenarios.<br><br>Distribution and demonstration of a first aid kit, including how and when to use each item.                                                                                                                                             | Participant demonstration and return demonstration to assess technique and confidence.<br><br>Verbal and visual feedback provided by the PI for improvement and encouragement. |

**Outcome:**

The primary outcome of the study is mother's behaviour regarding prevention of home accidents. The mother's behaviour includes knowledge related to prevention of home accidents will measured through structured knowledge questionnaire. Global score of knowledge questionnaire is ranging from 0-30. High score indicates higher knowledge. Additionally, Mother's behaviour is also measured by researcher made five point Likert scale including Perceived Severity, perceived vulnerability, Response efficacy, Self-efficacy and Perceived response cost. Global score of the Likert scale is ranging from 23-115. Below 53 considered poor behaviour, 54-83 can be considered as appropriate behaviour and above 84 can be categorised as excellent behaviour. Sociodemographic data includes mother's age, child age, genders of the child, Number of children mother is having, number of family in the house, family income, type of family and presence of chronic disease in the parents.

**Statistical analysis**

Descriptive statistics for demographic data will be presented using frequencies, percentages, means, and standard deviations. The Shapiro-Wilk test will be used to assess the normality of the data. Depending on the distribution, appropriate parametric or non-parametric tests will be employed to examine significant

differences within and between groups. Participant drop-out rates will be documented in a flowchart. A p-value of  $< 0.05$  will be considered statistically significant. To evaluate the effectiveness pre-test and post-test 1 and 2 will be compared through repeated measure ANOVA. All statistical analyses will be conducted by a statistician who will remain blinded to group assignments. The Pearson correlation coefficient will be used to explore the relationship between Protection Motivation Theory constructs and behaviour, while a linear regression model will be applied to predict behaviour based on PMT constructs.

**Data monitoring and Management**

Data monitoring will be carried out by principle investigator to ensure adherence to protocol and data quality as the intervention was non-invasive and educational in nature, no serious harms will be anticipated. Minor discomforts such as anxiety during discussions about home accidents were addressed through supportive counselling. Ethical oversight will be maintained throughout, ensuring participant safety, voluntary participation, and confidentiality. All participant information and data, including consent forms, completed data collection tools, participant files, correspondence, and other study-related documents, will be securely stored on password-protected computers.



**Trial status**

The first participant was included in the study in August 2025, and the last participant is expected to be included in October 2025.

**DISCUSSION AND PERSPECTIVES**

The high prevalence of home-injury can lead to significant physiological, psychological, social, environmental, and financial burden, thereby affecting the day-to-day routine of children as well as their families [27, 28]. Findings from this pragmatic RCT show that a brief, PMT-grounded, nurse-led programme can quickly enhance maternal safety practices and reduce home-injury events among under-five children [29]. Post-intervention declines in injury frequency observed in parallel study on Home Safety Supervisory Programme cluster-RCT from Karnataka, where nurse facilitators achieved significant reductions in hazards and injuries [30]. Overall, a nurse-led intervention grounded in Protection Motivation Theory for mothers of under-five children holds significant potential to advance child safety by improving knowledge, fostering preventive behaviours, and reducing the risk of home accidents. This community-based approach

enhances accessibility, empowers mothers through specific education, and promotes sustainable behaviour change. By integrating such interventions into routine maternal and child health services, it is possible to improve maternal behaviour in reducing preventable childhood injuries in a cost-effective and impactful manner.

**Strengths and Limitations**

The strength of the study protocol includes the intervention is grounded in the PMT based behavioural framework that supports systematic behaviour change. Additionally, the study focuses on mothers of under-five children—a particularly vulnerable group with a high risk of home injuries—thereby addressing a significant public health concern. The intervention is culturally tailored and utilizes multiple teaching strategies, including visual aids, verbal instruction, and demonstrations, to enhance participant engagement, knowledge retention, and behavioural adoption. The study is limited to exclusively on mothers, potentially overlooking the role of other caregivers in ensuring child safety within the home. Additionally, the study's short follow-up duration and limited sample size restricts the ability to assess the long-term sustainability and difference between study groups.

Table 2: Enrolment, intervention and assessment schedule

| Study Period                                                                                                       | Screening        | Allocation | Baseline                                 | Intervention | Post intervention | Follow up 1              |
|--------------------------------------------------------------------------------------------------------------------|------------------|------------|------------------------------------------|--------------|-------------------|--------------------------|
| Time point                                                                                                         | July August 2025 |            | October to December 2025<br>1 to 4 weeks |              |                   | 4weeks Post intervention |
| <b>Enrolment</b>                                                                                                   |                  |            |                                          |              |                   |                          |
| Screening eligible participants                                                                                    | X                |            |                                          |              |                   |                          |
| Informed consent                                                                                                   | X                |            |                                          |              |                   |                          |
| Randomization                                                                                                      | X                |            |                                          |              |                   |                          |
| Allocation                                                                                                         |                  | X          |                                          |              |                   |                          |
| Assessment                                                                                                         |                  |            |                                          |              |                   |                          |
| Socio-demographic characteristics                                                                                  | X                |            |                                          |              |                   |                          |
| Mother's behaviour in terms of Knowledge, perceived threat, response efficacy, and self-efficacy and response cost |                  |            | X                                        | X            | X                 |                          |
| Interventions                                                                                                      |                  |            |                                          |              |                   |                          |
| Nurse-led intervention + Treatment as usual                                                                        |                  |            | ➔                                        |              |                   |                          |

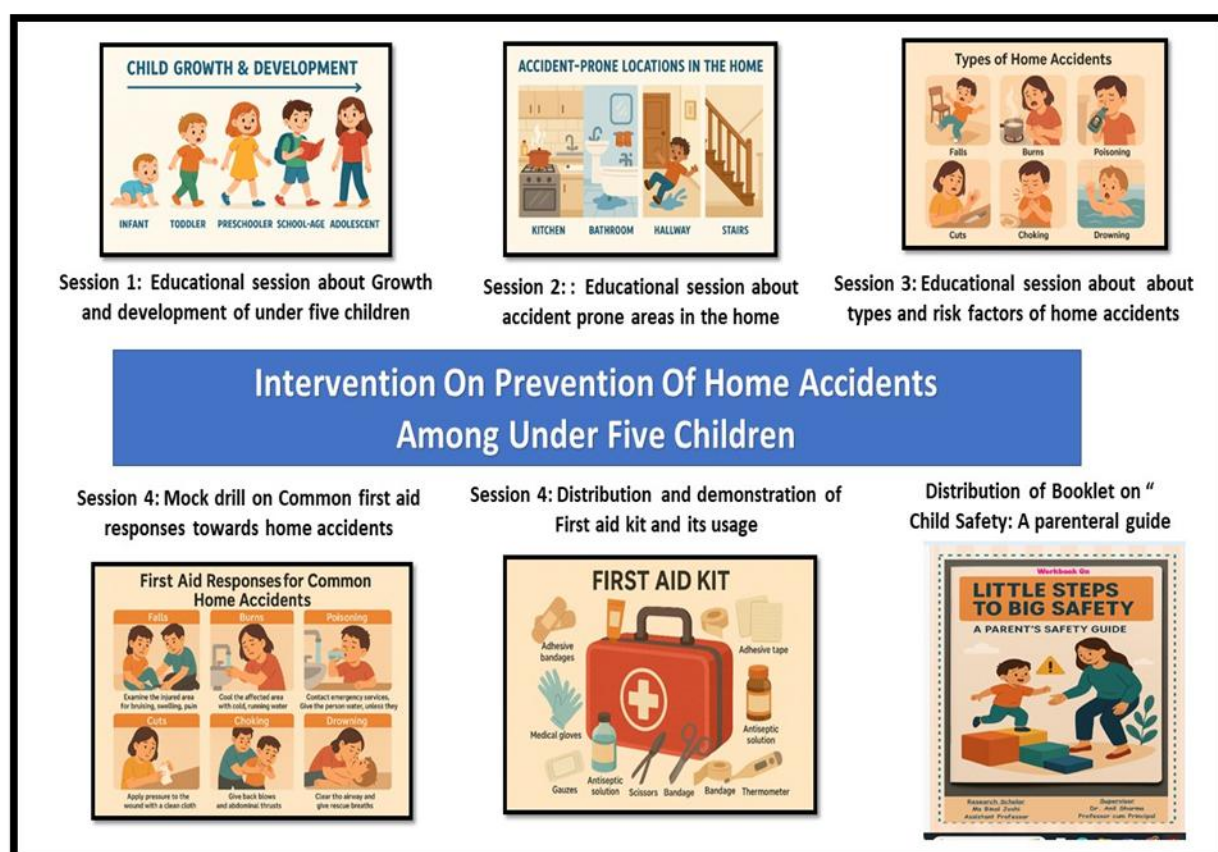


Figure 1: The components Nurse led Intervention on prevention of home accidents

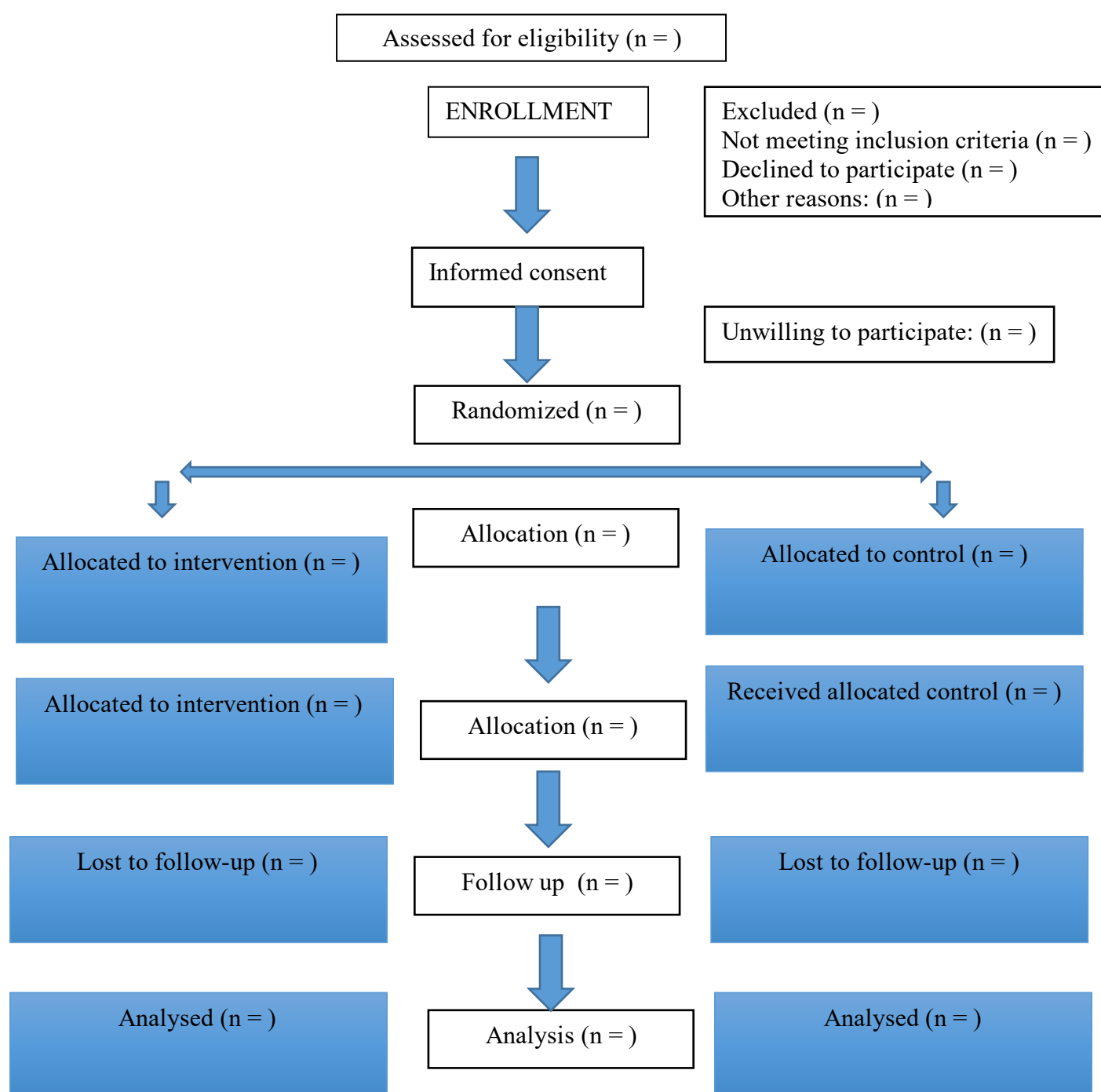


Figure 2: CONSORT Flow chart

**Author contributions**

All authors (Mrs. Binal Joshi, Dr. Anil Sharma) contributed substantially to the study's concept and design, approve the submitted version, and take personal responsibility for the content presented.

**Funding:** Self-funded

**Consent for publication:** All results, whether positive or negative, will be published. Information regarding the potential publication of study findings is included in the participant information

sheet and addressed during the informed consent process.

### Competing interests

The authors declare no competing interests.

### REFERENCES

- [1] Choudhary NPS, Lily AD, Chauhan S, Tiwari SK. Mothers' knowledge regarding prevention of home accidents among toddlers: a cross-sectional study. *RGUHS J Nurs Sci.* 2025 Jan 31;15(1):56–69.
- [2] Shetty S, Nayak B, George A, Shetty A, Guddattu V Evidence of Interventions for the Prevention of Unintentional Injuries: Scoping Review *JMIR Pediatr Parent* 2025;8:e67877 URL: <https://pediatrics.jmir.org/2025/1/e67877> DOI: 10.2196/67877
- [3] Peden, M., Oyegbite, K., Ozanne-Smith, J., Hyder, A. A., Branche, C., Rahman, A. F., ... & Bartolomeos, K. (2008). \*World report on child injury prevention\*. Geneva: World Health Organization.
- [4] Bartlett S. The problem of children's injuries in low-income countries: a review. *Health Policy and Planning.* 2002;17:1–13. [[PubMed](#)]
- [5] Fadel SA, Rasaily R, Awasthi S, Begum R, Black RE, Gelband H, *et al* . Changes in cause-specific neonatal and 1–59-month child mortality in India from 2000 to 2015: a nationally representative survey. *Lancet.* 2017;390(10106):1972–1980. doi: 10.1016/S0140-6736(17)32162-1
- [6] Sharma SL, Reddy NS, 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.* 2018;5:41World Health Organization. (2008). *World report on child injury prevention*. Geneva: WHO Press.
- [7] Kumar M, Pathak VK, Tripathi S, Upadhyay A, Singh VV, Lahariya C. Burden of Childhood Injuries in India and Possible Public Health Interventions: A Systematic Review. *Indian J Community Med.* 2023 Sep-Oct;48(5):648-658. doi: 10.4103/ijcm.ijcm\_887\_22. Epub 2023 Sep 7. PMID: 37970167; PMCID: PMC10637604.
- [8] WHO HECA issue Briefs Series. 2019Last accessed on 2019 Mar 11 Available from: [https://www.who.int/heca/infomaterials/issue\\_briefs/en/](https://www.who.int/heca/infomaterials/issue_briefs/en/)
- [9] Chandran A, Hyder AA, Peek-Asa C. The global burden of unintentional injuries and an agenda for progress. *Epidemiol Rev.* 2010;32(1):110-20. doi: 10.1093/epirev/mxq009. Epub 2010 Jun 22. PMID: 20570956; PMCID: PMC2912603.

- 
- [10] World Health Organization. (2008). *World report on child injury prevention*. Geneva: WHO Press.
- [11] National Crime Records Bureau. (2022). *Accidental deaths and suicides in India 2021*. Ministry of Home Affairs, Government of India.
- [12] 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
- [13] Dave VR, Rana BM, Shah VR, Sonaliya KN. A Study on Epidemiology of Unintentional Childhood Injury at One of the Districts of Gujarat State: An Indian Council of Medical Research Task Force Study. *Indian J Community Med.* 2022 Apr-Jun;47(2):187-191. doi: 10.4103/ijcm.ijcm\_1275\_21. Epub 2022 Jul 11. PMID: 36034236; PMCID: PMC9400353.
- [14] Khan S, Tauheed N, Nawab S, Afzal S, Khalique N. Domestic accidents among under-5 year children: a study on the modern day epidemic. *Int J Community Med Public Health* 2019;6:1529-35.
- [15] Rajan B, Nooyi SC, Sastry NKB, George A, Rao C, M SB. Unintentional Child Injury in Rural and Urban Siddlagatta, Karnataka, India: A Community-Based Survey. *Cureus.* 2023 Oct 30;15(10):e47960. doi: 10.7759/cureus.47960. PMID: 38034157; PMCID: PMC10685700.
- [16] Bradley F M, (2017): “Community health for student nurses”, home safety, accidents prevention, *W.B. Saunders company, Philadelphia journal*, 76(5), 430-437.
- [17] Parmeswaran GG, Kalaivani M, Gupta SK, Goswami AK, Nongkynrih B. Unintentional Childhood Injuries in Urban Delhi: A Community-Based Study. *Indian J Community Med.* 2017 Jan-Mar;42(1):8-12. doi: 10.4103/0970-0218.199791. PMID: 28331247; PMCID: PMC5349010.
- [18] Watson, M., Kendrick, D., Coupland, C., Woods, A., & Futers, D. (2005). Providing child safety equipment to prevent injuries: randomised controlled trial. *BMJ*, 330(7484), 178. <https://doi.org/10.1136/bmj.38349.664870.8F>
- [19] Alrimawi, I., Saleh, M. Y. N., & Salameh, R. A. (2020). The effect of a nurse-led intervention program on mothers' knowledge of unintentional injuries prevention among children: A quasi-experimental study. *International*
-

- Journal of Nursing and Health Care Science, 7(1), 34–42.
- [20] Kendrick, D., Barlow, J., Hampshire, A., Stewart-Brown, S., & Polnay, L. (2008). Parenting interventions for the prevention of unintentional injuries in childhood. Cochrane Database of Systematic Reviews, (4), CD006020. <https://doi.org/10.1002/14651858.CD006020.pub2>
- [21] Abbassinia M, Barati M, Afshari M. Effectiveness of interventions in the prevention of home injuries among children under 5 years of age: A systematic review. Arch Trauma Res 2019;8:190-7. (PDF) *Effectiveness of interventions in the prevention of home injuries among children under 5 years of age: A systematic review.*
- [22] Kimhasawad W, Punyanirun K, Somkotra T, Detsomboonrat P, Trairatvorakul C, Songsiripradubboon S. Comparing protection-motivation theory-based intervention with routine public dental health care. Int J Dent Hyg. 2021;19(3):279-286. doi: 10.1111/idh.12522
- [23] Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. *The Journal of Psychology*, 91(1), 93–114. Centers for Disease Control and Prevention. (2022). *Injury prevention and control: Child safety and injury prevention.* <https://www.cdc.gov/safechild/index.html>
- [24] Morowatisharifabad MA, Asadpour M, Zakeri MA, Abdolkarimi M. The effect of integrated intervention based on protection motivation theory and implementation intention to promote physical activity and physiological indicators of patients with type 2 diabetes. Biomed Res Int. 2021;2021:6637656. doi: 10.1155/2021/6637656 [DOI] [PMC free article] [PubMed] [Google Scholar]
- [25] Japalaghi, Z., Bahrami, A., Beiranvand, R. et al . The effect of educational intervention based on protection motivation theory in improving reproductive health protective behaviours: a quasi-experimental study. BMC Women's Health 25, 154 (2025). <https://doi.org/10.1186/s12905-025-03680-9>
- [26] Ebadi Fardazar F, Solhi M, Mansori K, Mansouri Hanis Sh, Hashemi SS. Assessment the Effect of Educational Intervention on Preventive Behaviours of Home Accidents in Mothers with Children Less than 5- Year Based on Protection Motivation Theory (PMT). Int J Pediatr 2016; 4(7): 2051-59.

- 
- [27] Marwa Mamdouh Shaban, Heba Magdy Sharaa, Abdulqadir J. Nashwan, Effect of community-based intervention on knowledge and practice of rural mothers toward children home injuries, *International Journal of Africa Nursing Sciences*, Volume 19, 2023, 100593,
- [28] George A, Renu G, Shetty S. Effect of a Home Safety Supervisory Program on Occurrence of Childhood Injuries: A Cluster Randomized Controlled Trial. *Indian Pediatrics*. 2021;58(6):548–552.  
doi:10.1007/s13312-021-2238-y  
([safetylit.org](https://safetylit.org))
- [29] O.S. El Seifi, E.M. Mortada, N.M. Abdo. Effect of community-based intervention on knowledge, attitude, and self-efficacy toward home injuries among Egyptian rural mothers having preschool children
- [30] George A, Renu G, Shetty S. Effect of a Home Safety Supervisory Program on Occurrence of Childhood Injuries: A Cluster Randomized Controlled Trial. *Indian Pediatr*. 2021 Jun 15;58(6):548-552. PMID: 34176795.
-