

A study to assess the effectiveness of developed multimedia package regarding unintentional injuries among mothers of Udaipur district, Rajasthan, India

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■ **ABSTRACT :** Injury prevention is an incredible beneficial community welfare approach and addressing the mother's knowledge base is the most hopeful one to battle the injury problem. A custom-made package will very well interweave into the existing knowledge of the mothers to stand by to safe guard their children from injuries and above all for its wider applicability measuring the impact or effectiveness of package was the objective of the present study. Three non government schools from Udaipur, Rajasthan were selected. A stratified purposive sampling technique and self designed questionnaire was used. The study population was 180 mothers. In the first phase of study response related to fifty-nine closed ended questions on five prevalent unintentional injuries *i.e.* Burns, scalds and electrocution, poisoning, falls, slips and trips, drowning and road traffic injuries were elicited. The second phase was related to self rating of the knowledge level of respondents towards various unintentional injuries and their causes among children on a five point likert scale. The cronbach's alpha co-efficient for establishing scale reliability was used and experimental research design was used. In third phase the respondents were exposed to DVD and a manual was given to carry home. After a gap of one month, the post test of the respondents was conducted. Frequency, percentage, mean score were used to analyze data statistically. Independent sample t-test was applied to study the difference between the knowledge of mothers about unintentional injuries before and after exposure to MMP (DVD and Manual). The entire hypothesis was tested using paired sample t-test assuming unequal variance at 5 per cent level of significance (2 tailed). The statistical analysis was made with SPSS 16.0 statistical software. After the intervention through MMP, the mean knowledge scores were in the range of 4.67 to 4.94. Consequently, it can be concluded that now respondents have extreme knowledge about various unintentional injuries among children and MMP was effective in increasing the knowledge of mothers.

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Child injury - illustrate the most urgent moral quandary of the new millennium. Globally, injuries have turn out to be the universal and foremost cause of death among the children (Unicef, 2007; WHO, 2012 and Alonge *et al.*, 2016). Injury prevention is an incredible beneficial community welfare approach – the expenditure of intervention is generally to a great extent lesser than the charges of consequences of injury. Consequently, addressing the mother’s knowledge base is the most hopeful one to battle the injury problem. Researches make known that parents do not hold a strong belief in the preventability of injuries, though they believe that they can somehow keep their child safe (Shrestha *et al.*, 2014). An instructive programme delivered by via mass media through a teacher or a trained personnel or a health worker or community leader in classes, courses, and special sessions can be a powerful medium to empower mother, on the various aspect of domestic accidents specially the cause and safety promotion. Arulogun *et al.* (2013); Olutayo (2013) and Suguna (2015) in their studies have also highly recommended the same.

Using tailored messages, as opposed to generic materials, in mother-directed interventions can enhance positive effects to prevent the little ones from the mistiness of injuries. Above all, a custom- made package will very well interweave into the existing knowledge of the mothers to be sentient of injury hazards and will forever help to stand by to safe guard their children from injuries which can put in their child to either death or hospitalization or a visit to an emergency care unit or can result in a temporary or permanent disabilities whether physical or social or either psychological. Also, it recommends short-term and long term measures that parents, health care providers, communities and policy makers can take ahead to keep the budding lives protected from brutal disability and fatality caused every day due to unintentional injuries like burns, scalds and electrocution, poisoning, falls, slips and trips, drowning and road traffic injury.

The impact of injury prevention programmes must be measured, both for success and to identify areas needing improvement (Banerji, 2012). A parallel study also discloses that measurement of effect is an essential component of injury prevention efforts (CDC, 2012).

As a result to develop a concise injury fortification multimedia package, the study aimed to explore from

the mothers the knowledge of the fundamental epidemiology of unintentional injuries and on the basis of the result, developed the package and for its wider applicability studied the effectiveness of the package.

Objective:

To study the effectiveness of developed instructional multimedia package (DVD and Manual) in terms of gain in knowledge by the mothers having children of 4-6 years of age group.

■ RESEARCH METHODS

The study was conducted purposively in Udaipur city (Rajasthan) and three non-government schools were selected fulfilling the criteria of objectives. A stratified purposive sampling technique was used. The study population was divided into two strata *i.e.* 90 mothers having children of 4-5 years of age and another 90 mothers having children of 5-6 years of age. So, a total of 180 mothers constituted the sample. In the first phase of investigation self designed questionnaire was used where specifically, 180 respondents in section one were asked to comment on fifty-nine closed ended questions related to the general awareness as well as the causative factors of the five prevalent unintentional injuries *i.e.* burns, scalds and electrocution, poisoning, falls, slips and trips, drowning and road traffic injuries among mothers. The second section was related to self rating of the knowledge level of respondents towards various unintentional injuries and their causes among children on a five point likert scale. The knowledge level of different injuries was rated on 5 point scale ranging from 5 (Extremely knowledgeable) to 1 (Not at all knowledgeable) as revealed in Table A. Following criteria were used for analysis part:

Table A : Rating of the knowledge level by the respondents		
Sr. No.	Score range	Scale
1	1.00-1.80	Not at all knowledgeable
2.	1.81-2.60	Slightly knowledgeable
3.	2.61-3.40	Somewhat knowledgeable
4.	3.41-4.20	Moderately knowledgeable
5.	4.21-5.00	Extremely knowledgeable

The cronbach’s alpha co-efficient for establishing scale reliability was used and experimental research design was used.

The respondents of each group (30 mothers having 4-5 year child and 30 mothers having 5-6 year child) in all the three schools were contacted during 'Parents Teachers Meetings' - PTM's and were exposed to DVD and a manual was given to carry home. The common procedure was followed for all the six group (6 x 30=180). After a gap of one month, the post test of the respondents was conducted.

Frequency, percentage, mean score were used to analyze data statistically. In order to study the difference between the knowledge of mothers about unintentional injuries before and after exposure to MMP, independent sample t-test was applied. The entire hypothesis was tested using paired sample t-test assuming unequal variance at 5 per cent level of significance (2 tailed). The statistical analysis was made with SPSS 16.0 statistical software.

■ RESEARCH FINDINGS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Mothers' knowledge toward unintentional injuries:

The first section of the research bring forth the Mothers' knowledge regarding all the five unintentional injuries and its causes. The study revealed that the overall mean knowledge score of all the 180 mothers was average in all the injury type *i.e.* burns, scalds and electrocution, poisoning, falls, slips and trips, drowning and road traffic injuries ranging from 64.25 to 111.31 of 180 maximum score but the study exposed to a significant gap in mothers' overall knowledge towards unintentional injury causes. The findings of the present research make known that the mean knowledge score was highest in poisoning (111.31) followed by burns, scalds and electrocution and drowning which was almost comparable (80.81 and 80.66) and the lowest among road traffic injuries and falls, slips and trips which was 64.27 and 64.25 concurrently. The present study knowledge results were not in concomitant with the research carried out in Tamil Nadu on women's awareness about domestic accidents among toddlers, revealed that the 54.7 per cent respondents had adequate knowledge, while 25.3 per cent had average knowledge and the remaining 20 per cent of the sample had inadequate knowledge (Suguna, 2015). From the study outcome, it can be concluded that

the mothers in the present research know the severity of poisoning, burns, scalds and electrocution and drowning, therefore, had knowledge to some extent (average) regarding these injuries. But despite the verity that road traffic accidents and falls were the most common cause of injury in pediatric trauma (Sharma *et al.*, 2011; Babu *et al.*, 2016 and Verma, 2016) surprisingly, our results revealed that the mean knowledge score of the mothers about these two injuries was just above the poor score (60), which was an indication of a lack of satisfactory knowledge level. Slim forethought on behalf of mothers can help evade disastrous consequences of injury for the children. Therefore, the present research necessitate for improved mandatory injury education programme which should be delivered by trained persons in classes, courses and special sessions to take a few key step forward by mothers in the conflict to trim down injury. The local experts from the education sectors can be involved so that appropriate steps and intervention techniques need can be determined to reduce the hazard of death or injury from the identified causes (Chowdhury *et al.*, 2009).

Mothers' knowledge rating toward unintentional injuries:

In the second section, the respondents were asked to specify their knowledge level towards unintentional injuries among children on 5 point scale ranging from 5 (Extremely knowledgeable) to 1 (Not at all knowledgeable). It can be observed from the Fig.1 that all the knowledge scores were in the range from 2.63 to 2.84 *i.e.* all the respondents had only somewhat knowledge about all the injuries. It was reported that they possessed highest knowledge in burns, scalds and electrocution *i.e.* 2.84 followed by road

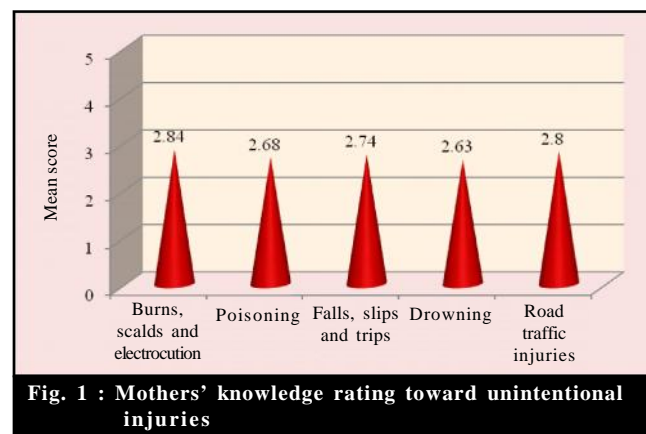


Fig. 1 : Mothers' knowledge rating toward unintentional injuries

traffic injuries and falls, slips and trips with the score of 2.80 and 2.74, respectively and 2.68 in poisoning and rated themselves with the least knowledge in drowning with the score of 2.63. This result figure out the fact that all the respondents were factual in self rating as the analysis of the knowledge result in section 1 revealed the similar findings in the present research that is all the mothers had average knowledge regarding all the five injuries.

Effectiveness of developed instructional multimedia package (mmp) in terms of gain in knowledge by mothers:

After the intervention through multimedia package (DVD and manual), the mean knowledge scores were in the range of 4.67 to 4.94 (Table 1). Consequently, it

can be concluded that now respondents have extreme knowledge about various unintentional injuries among children.

If we compare these scores from the scores before intervention (2.63 to 2.84), it can be noticeably concluded that MMP has significantly increased the knowledge of mothers as revealed in Table 2. The findings of the present study is in concomitant with the study conducted by Snowdon *et al.* (2008) which also revealed about the effectiveness of a multimedia intervention on the knowledge and actions of parents regarding children safety and revealed significant increase of knowledge from the use of the educational intervention.

To check whether this increment is significant or not, t-test was applied as presented in Table 3. For burns, scalds and electrocution the mean knowledge score

Table 1 : Respondents' knowledge towards unintentional injuries after exposure to MMP

Sr. No.	Types of unintentional injuries	Extremely knowledgeable	Moderately knowledgeable	Somewhat knowledgeable	Slightly knowledgeable	Not at all knowledgeable	Mean score	Level of knowledge
1.	Burns, scalds and electrocution	151	29	0	0	0	4.84	Extremely knowledgeable
2.	Poisoning	161	9	0	0	0	4.67	Extremely knowledgeable
3.	Falls, slips and trips	138	41	1	0	0	4.76	Extremely knowledgeable
4.	Drowning	162	8	0	0	0	4.68	Extremely knowledgeable
5.	Road traffic injuries	169	11	0	0	0	4.94	Extremely knowledgeable

Table 2 : Respondents' knowledge towards unintentional injuries before and after exposure to MMP

Sr. No.	Types of unintentional injuries	Before the exposure of MMP		After the exposure of MMP	
		Mean	Knowledge level	Mean	Knowledge level
1.	Burns, scalds and electrocution	2.84	Somewhat knowledgeable	4.84	Extremely knowledgeable
2.	Poisoning	2.68	Somewhat knowledgeable	4.67	Extremely knowledgeable
3.	Falls, slips and trips	2.74	Somewhat knowledgeable	4.76	Extremely knowledgeable
4.	Drowning	2.63	Somewhat knowledgeable	4.68	Extremely knowledgeable
5.	Road traffic injuries	2.80	Somewhat knowledgeable	4.94	Extremely knowledgeable

Table 3 : T-test results to measure significant increase in mothers' knowledge regarding unintentional injuries before and after exposure to MMP

Types of unintentional injuries		Mean	S.D.	t-values	P-value	Result
Burns, scalds and electrocution	Before	2.84	1.22	17.216	0.00	Significant
	After	4.84	0.97			
Poisoning	Before	2.68	0.67	25.213	0.00	Significant
	After	4.67	0.82			
Falls, slips and trips	Before	2.74	1.02	18.154	0.00	Significant
	After	4.76	1.09			
Drowning	Before	2.63	0.53	29.165	0.00	Significant
	After	4.68	0.78			
Road traffic injuries	Before	2.8	0.83	21.705	0.00	Significant
	After	4.94	1.03			

Tabulated value = 1.96, Level of Significance = 5%

increased from 2.84 to 4.84 with the calculated t-values of 17.216. Simultaneously for poisoning the mean knowledge score increased from 2.68 to 4.67 with the calculated t-values of 25.213. Similarly for falls, slips and trips the mean score increased from 2.74 to 4.76 having the calculated t-values of 18.154. For drowning the mean knowledge score increased from 2.63 to 4.68 with the calculated t-values of 29.165 and for road traffic injuries the mean knowledge score increased from 2.80 to 4.94 and the calculated t-values was found to be 21.705 (At 5% level of significance and tabulated value = 1.96).

Consequently from the results, the Null hypothesis is accepted and it can be concluded that multimedia package is effective in increasing the knowledge of mothers. Sharma (2009) revealed that after exposure to multimedia aid CD a good increase in knowledge of the respondents was observed as 96.66 per cent respondents fell in good knowledge category with the score range of 66.66-100 per cent. A significant difference was observed in pre and post- test scores of overall knowledge of the respondents with calculated 'Zw' value 4.85.

Conclusion:

Multimedia package is effective in increasing the knowledge of mothers which will definitely begin to develop a culture of safety regarding the gravity and preventability of the intended messages. Above all, reveal an advantage over traditional, lecture-based approach which are indeed more time consuming and staff intensive and in fact may not achieve the desired measurable outcomes in injury prevention safeguarding the children from the murkiness of injury.

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