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Research article

A study to assess the effectiveness of information booklet on knowledge of mothers regarding prevention of home accidents among children under five years in selected areas of urban community

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Abstract

Accidents are epidemic in the developed countries. In India accidental deaths are also in increase, accidents come after malnutrition, respiratory, gastrointestinal diseases, leukaemia or meningitis. “Home accidents are a substantial health problem for young children. An accident is a sudden cause of death or an emergency in children” Accidents are usually related to the growth and development of the children. **Aim:** To find out the association between mothers knowledge regarding prevention of home accidents among children (0-5 years) before and after giving information booklet. **Methods:** Fifty samples were selected using non probability purposive sampling and given Pre test & Post Test. The samples included are from mothers of 0-5 years old children in slum chawls of khar in Urban Mumbai. Fifty samples were selected using non probability purposive sampling. A self administer questionnaire was prepared to find the association between knowledge regarding prevention of home Accidents in mothers. It was established by experts in the field and reliability was tested using Split half method and Cronbachs Alpha. **Results:** The‘t’ value was calculated for comparison of pretest and post test score of information booklet. There was significant difference in pretest- post test mean score, which showed that the information booklet was effective. The t value was also calculated with independent t test, paired t test, chi square test and kolmogrov smirnov test. There was significant difference in pre-test- post test mean score, which showed that the information booklet was effective. **Conclusion:** Association of knowledge with demographic variables using ANOVA showed significant as well as non significant results.

Keywords: Effectiveness, information booklet, home accidents, prevention

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1. Introduction

Accidents among preschool children have been identified as important problems that need active reduction intervention as they cause injuries, deformities and possibly death. Accidents are major of the five leading causes of death in industrialized and developing countries [1, 2]. The prevalence of occurrence, prevention and safety measure put in place is a function of mothers’ education. This underscores the need for educational programs for mothers on how to prevent the occurrence of accidents in the home. A survey on the level of knowledge of the causes, prevention and practice of parent when accidents occur will guide in the area of knowledge to be imparted through a functional educational programme either by community health workers or general public enlightenment programmes as injuries arising from home accidents increase community health problems.

A comparative study done on incidence of home accidents in Palestinian and Israeli communities by convenient sampling on 300

families. Falls were the most common cause of injury reported by parents. The yard, living room and kitchen were the sites of greatest number of accidents. Burns represents an equal proportion of injuries to falls. Learning first aid in order to be able to provide care interest showed by parents [3].

A study done to identify determinations of mothers' home safety practices for prevention of 6 types of common injuries in children. Sample size was 59 mothers of children between 19-24 and 25-30 months old. Study shows factors that motivated mothers to engage in precautionary measures at home varied depending on the type of injury. Intervention programmes to enhance maternal home safety practices will need to forget different factors depending on type of injury [4].

A book by Dorothy Marlow and Barbara 2005 shows different types of childhood accidents their assessment and immediate management; book says prevention of accidents based on Childs level of growth and development. To educating parents regarding accidents prevention and their attitude towards growth and developments is necessary [5]. Study by on Brazilian mothers' knowledge about home dangers and safety precautions an initial evaluation. Correlation study was done on 96 mothers by convenient sampling. Brazilian mothers identified 62% of the dangers presented in the illustrations and provided suitable precautions for prevention or remediation of those dangers [6].

A Study given on Attitudes and behaviors of housewives in the prevention of domestic accidents and their first aid knowledge levels. 180 housewives face to face interview was taken and determined that both first aid knowledge level and development of positive accidents preventive attitudes and behaviors were affected by the educational levels [7].

A study on care gives knowledge and perception of preventing childhood lead poisoning. A 32 item questionnaire was developed to assess knowledge and perceptions of family care givers of children younger than 8 years age results suggest that even care givers of children in high risk areas do not mention lead poisoning as a health concern [8].

A study was conducted on parents' perception, attitude and behavior towards child safety in 14 European countries. A quantitative survey of parents of children aged 5 years or under was performed in 14 EU state in order to enable better targeting of prevention efforts aimed at educating parents. Sample size was 2088, results show 95% of parents reported that they personally take measures to avoid accidents injury to their children. Lack of awareness or knowledge about causes of accidents was 2nd response. 2/3rd of parents would like to see more help from government to prevent childhood injuries [9].

A study on effects of parental viewing of children risk behavior on house safety practices. 60, 4-7 year old children and their care givers participated in 3 session project. Parents were exposed to one of 3 videos (a) their own child with stimulated home hazards (b) a pilot child with hazards (c) a control child development video results show exposure to video of parents own child playing with stimulated hazards resulted in improved home safety practices but not with pilot child [10].

Aim

To find out the association between mothers knowledge regarding prevention of home accidents among children (0-5 years) before and after giving information booklet.

2. Methods

Fifty samples were selected using non probability purposive sampling [12] and given Pre test & Post Test. The samples included are from mothers of 0-5 years old children in slum chawls of khar in Urban Mumbai. Fifty samples were selected using non probability purposive sampling [13]. A self administer questionnaire was prepared to find the association between knowledge regarding prevention of home Accidents in mothers. It was established by experts in the field and reliability was tested using Split half method and Cronbachs Alpha.

3. Result

The Data collection tool consisted of following sections

Section I

- This part is consisted of knowledge level of mothers of 0-5 year children about

Home accidents, types and causes of accidents.

- Prevention of home accidents such as burns and scalds falls cuts and injuries, electric shock, suffocation, poisoning and drowning.

SN	Variables	Pre-testing		Post-testing	
		Mean	S.D	Mean	S.D
1	Introduction variables	1.005	0.313	3.04	0.313
2	Burn accidents	1.109	0.457	1.710	0.486
3	Fall accidents	1.267	0.659	2.147	.686
4	Cuts and injuries	0.830	0.542	1.460	
5	Aspiration/suffocation/strangulation	1.015	0.665	1.720	0.619
6	Electric shock accidents	1.02	0.455	1.430	.3352
7	Poisoning accidents	1.340	0.772	2.060	0.652
8	Drowning accidents	1.220	0.648	2.020	0.685
9	First aid kit	1.760	1.098	2.980	1.115

Reliability of the tool

Assessed by using the software packages SPSS 16.0 version SAS, Minitab. Reliability analysis, percentages, distribution of data, mean and standard deviation values, test of significance by using t test and ANOVA is applied by using the above software statistical packages. Reliability analysis by using split half method is 0.80 and with cronbachs alpha method it is 0.78. The reliability of the tool is has been found to be effective and reliable since the reliability value is greater than 0.70 and is statistically significant.

Pilot study

A pilot study was conducted during 03.03.10 to 10.03.10 in the ambedkar nagar of khar west opposite to gurunanak municipal dispensary. An administrative approval was obtained from concerned authority. Five houses from slum chawls were selected and their consent for the participation in the study was taken. The time spent for each house was 30-40 minutes.

Section 1

Comparison of pre- test and post- test knowledge mean score of mothers

Table 1: Descriptive statistics for pre-testing and post-testing

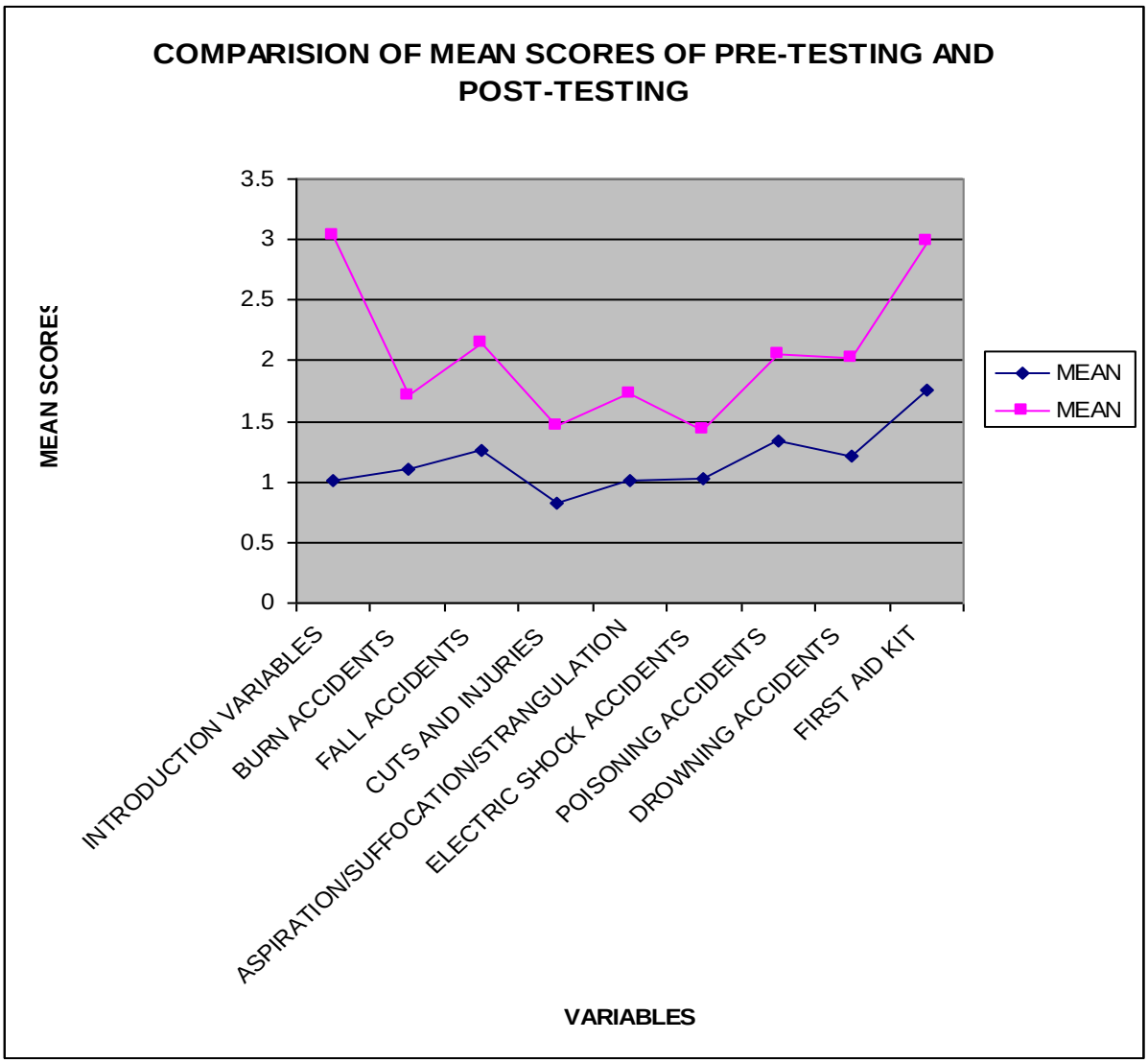

Figure 1

Above tables and graph shows that knowledge of mothers regarding home accidents prevention in pre- test and post test scores shows significant increase in knowledge, as mean score of post-test knowledge is more than mean score of pre-test knowledge of above variables.

Section 2-Effect of information booklet on mothers knowledge

Significance of difference between the means with ‘t’test

Table 2: Independent T– Test for Variables of pre-testing and of post

SN	Variables	D.F	T-Value	P - value	D.F	T - value	P - value	Result
1	Burn accidents	49	23.738	0.001	49	24.944	0.001	Significant
2	Fall accidents	49	31.244	0.000	49	31.500	0.000	Significant
3	Cuts and injuries	49	16.885	0.004	49	25.289	0.001	Significant
4	Aspiration/suffocation/strangulation	49	10.420	0.001	49	17.825	0.000	Significant
5	Electric shock accidents	49	14.398	0.001	49	19.619	0.001	Significant
6	Poisoning accidents	49	12.270	0.010	49	22.347	0.001	Significant
7	Drowning accidents	49	12.270	0.010	49	20.857	0.030	Significant
8	First aid kit	49	11.330	0.002	49	18.889	0.010	Significant

D.F = degrees of freedom, P < 0.05 = Significant, P > 0.05 = Not Significant, Tabulated Value = 2.02

Table 3: Paired T – Test for Variables of pre-testing and post-testing

SN	Variables	D.F	T- value	P- value	Result
1	Burn accidents pre-post	49	11.809	0.003	Significant
2	Fall accidents pre-post	49	10.885	0.002	Significant
3	Cuts and injuries pre- post	49	9.925	0.002	Significant
4	Aspiration/suffocation/strangulation pre- post	49	12.793	0.000	Significant
5	Electric shock accidents pre- post	49	8.887	0.001	Significant
6	Poisoning accidents pre- post	49	8.831	0.001	Significant
7	Drowning accidents pre- post	49	8.854	0.001	Significant
8	First aid kit pre-post	49	8.491	0.002	Significant

D.F = degrees of freedom, P < 0.05 = Significant, P > 0.05 = Not Significant, Tabulated Value = 2.02

Table 4: Chi-square test for variables of pre- and post-testing

SN	Variables	d.f	Chi- value	P - value	Result
1	Burn accidents pre-post	49	88.460	0.000	Significant
2	Fall accidents pre-post	49	53.320	0.001	Significant
3	Cuts and injuries pre-post	49	42.640	0.001	Significant
4	Aspiration/suffocation/ strangulation pre- post	49	60.560	0.002	Significant
5	Electric shock accidents pre- post	49	80.720	0.000	Significant
6	Poisoning accidents pre- post	49	44.560	0.010	Significant
7	Drowning accidents pre- post	49	70.400	0.003	Significant
8	First aid kit pre-post	49	33.680	0.001	Significant

D.F = degrees of freedom, P < 0.05 = Significant, P > 0.05 = Not Significant, Tabulated Value = 3.84

Table 5: Kolmogrov- smirnov test for variables of pre-testing and post-testing

SN	Variables	D.F	Z - value	P - value	Result
1	Burn accidents pre-post	49	3.810	0.000	Significant
2	Fall accidents pre-post	49	3.364	0.001	Significant
3	Cuts and injuries pre- post	49	3.819	0.001	Significant
4	Aspiration/suffocation/strangulation pre- post	49	3.051	0.002	Significant
5	Electric shock accidents pre- post	49	3.743	0.000	Significant
6	Poisoning accidents pre-post	49	2.759	0.010	Significant
7	Drowning accidents pre-post	49	3.485	0.003	Significant
8	First aid kit pre-post	49	2.514	0.001	Significant

D.F = degrees of freedom, P < 0.05 = Significant, P > 0.05 = Not Significant, Tabulated Value = 1.96

Section–3 determination of association of knowledge with demographic variables

Table 6: analysis of variance (ANOVA) for variables of total knowledge score by age pre-testing and post-testing

SN	Variables	D.F	F - value	P - value	F - value	P - value	Result Significant Yes or No	
							pre	post
1	Introduction variables	49	0.712	0.550	0.850	0.654	No	No
2	Burn accidents	49	1.100	0.359	2.994	0.031	No	Yes
3	Fall accidents	49	0.219	0.889	6.698	0.001	No	Yes
4	Cuts and injuries	49	0.399	0.755	3.568	0.004	No	Yes
5	Aspiration/ suffocation/ strangulation	49	1.134	0.345	3.312	0.001	No	Yes
6	Electric shock accidents	49	0.664	0.578	5.421	0.002	No	Yes
7	Poisoning accidents	49	1.687	0.183	3.354	0.020	No	Yes
8	Drowning accidents	49	1.780	0.164	3.061	0.037	No	Yes
9	First aid kit	49	0.459	0.712	3.284	0.001	No	Yes

D.F = degrees of freedom

P < 0.05 = Significant

P > 0.05 = Not Significant

Tabulated Value =2.78

Table 7: Analysis of variance (ANOVA) for variables of total knowledge score by education pre-testing and post testing

SN	Variables	d.f	F - value		P - value		Result Significant Yes or No	
			Pre	Post	Pre	Post	Pre	Post
1	Introduction variables	49	0.475	3.451	0.701	0.001	No	Yes
2	Burn accidents	49	0.845	2.891	0.477	0.001	No	Yes
3	Fall accidents	49	1.289	3.039	0.285	0.030	No	Yes
4	Cuts and injuries	49	2.237	3.592	0.118	0.020	No	Yes
5	Aspiration/ suffocation/ strangulation	49	1.066	3.562	0.353	0.021	No	Yes
7	Electric shock accidents	49	1.880	3.794	0.164	0.001	No	Yes
8	Poisoning accidents	49	0.043	3.674	0.958	0.010	No	Yes
9	Drowning accidents	49	0.515	4.051	0.601	0.020	No	Yes
10	First aid kit	49	0.454	3.986	0.638	0.010	No	Yes

D.F = degrees of freedom

P < 0.05 = Significant

P > 0.05 = Not Significant

Tabulated Value = 2.78

Table 8 Analysis of variance (ANOVA) for variables of total knowledge score by occupation pre-testing and post testing

SN	Variables	D.F	F - value		P - value		Result Significant	
			Pre	Post	Pre	Post	Pre	Post
1	Introduction variables	49	1.081	3.281	0.348	0.001	No	Yes
2	Burn accidents	49	1.645	3.556	0.204	0.002	No	Yes
3	Fall accidents	49	2.853	3.853	0.040	0.002	Yes	Yes
4	Cuts and injuries	49	2.237	4.537	0.118	0.010	No	Yes
5	Aspiration/suffocation/strangulation	49	1.066	5.766	0.353	0.000	No	Yes
6	Electric shock accidents	49	2.889	3.975	0.003	0.003	Yes	Yes
7	Poisoning accidents	49	2.954	3.594	0.001	0.020	Yes	Yes
8	Drowning accidents	49	0.515	4.515	0.606	0.002	No	Yes
9	First aid kit	49	2.995	5.895	0.012	0.003	Yes	Yes

D.F = degrees of freedom

$P < 0.05$ = Significant

$P > 0.05$ = Not Significant

Tabulated Value = 2.78

Table 9: Analysis of variance (ANOVA) for variables of total knowledge score by monthly family income of pre-testing and post-testing

SN	Variables	D.F	F - value		P - value		Result significant yes or no	
			Pre	Post	Pre	Post	Pre	Post
1	Introduction variables	49	10.582	3.567	0.002	0040	Yes	Yes
2	Burn accidents	49	4.845	4.316	0.001	0.030	Yes	Yes
3	Fall accidents	49	9.654	3.983	0.003	0.021	Yes	Yes
4	Cuts and injuries	49	2.743	4.351	0.070	0.041	No	Yes
5	Aspiration/ Suffocation/ strangulation	49	1.414	5.553	0.240	0.003	No	Yes
6	Electric shock accidents	49	5.628	6.972	0.022	0.011	Yes	Yes
7	Poisoning accidents	49	2.890	3.247	0.040	0.040	Yes	Yes
8	Drowning accidents	49	2.391	3.522	0.084	0.004	No	Yes
9	First aid kit	49	0.933	3.672	0.339	0.003	No	Yes

D.F = degrees of freedom

P < 0.05 = Significant

P > 0.05 = Not Significant

Tabulated Value = 2.78

Table 10: analysis of variance (ANOVA) for variables of total knowledge score by type of family of pre-testing

SN	Variables	d.f	F - value		P - value		Result Significant Yes or No	
			Pre	Post	Pre	Post	Pre	Post
1	Introduction variables	49	0.061	4.578	0.806	0.001	No	Yes
2	Burn accidents	49	2.318	3.789	0.134	0.041	No	Yes
3	Fall accidents	49	0.257	4.894	0.615	0.030	No	Yes
4	Cuts and injuries	49	0.166	3.788	0.685	0.003	No	Yes
5	Aspiration/ suffocation/ strangulation	49	0.650	5.468	0.424	0.002	No	Yes
6	Electric shock accidents	49	0.561	4.964	0.458	0.010	No	Yes
7	Poisoning accidents	49	0.036	4.562	0.850	0.010	No	Yes
8	Drowning accidents	49	0.650	3.587	0.424	0.002	No	Yes
9	First aid kit	49	0.930	3.875	0.340	0.002	No	Yes

D.F = degrees of freedom

$P < 0.05$ = Significant

$P > 0.05$ = Not Significant

Tabulated Value = 2.78

4. Discussion

Mother's age and educational attainment are relevant variables in determination of the knowledge display in case of home accidents causes and prevention as [11] observed that so many accidents could be less serious if parents with children know what to do as soon as they occur.
This section deals with knowledge of mothers before and after administering the information Booklet.

a) Comparison of pretest and post test mean score of mothers' knowledge was done. There was significant increase in - post test mean score, which showed that the information booklet was effective.

b) The t value was calculated by using independent t test, there was table value more than calculated value at degree of freedom 49 and 0.05 level of significance which showed that the information booklet was effective.

c) The t value was also calculated by using paired t test, there was table value more than calculated value at degree of freedom 49 and 0.05 level of significance which showed that the information booklet was effective

d) Chi square test was done for calculating t,chi value was more than tabulated vaue at degree of freedom 49 and 0.05 level of significance which showed that the information booklet was effective

e) Kolmogrov smirnov test was done to calculate Z value which was more than tabulated vaue at degree of freedom 49 and 0.05 level of significance which showed that the information booklet was effective

f) Association of knowledge with selected demographic variables was done by using ANNOVA.

There is no association of age of mothers with pretest knowledge score as F value is less than table value at degree of freedom 49 at 0.05 level of significance, therefore hypothesis Ho accepted and H1 rejected. In post testing except introduction variable knowledge score of mothers regarding all types of accidents has significant association with age as calculated F value is more than table value 2.78. Variables for pre testing score of mothers regarding home accident shows no association with education as calculated value of F is less than tabulated value 2.78. Therefore hypothesis H0 is accepted and H1 is rejected. as there is no association of knowledge with education. Post testing knowledge score of mothers regarding home accidents shows association with education as F value is more than tabulated value 2.78. It is noted that fall accident, poisoning, electric shock accident and first aid kit pre testing knowledge score of mothers shows association with occupation therefore, hypothesis Ho is rejected and H1 is accepted.

For other all variables pre testing knowledge score of mother's shows no association with occupation as calculated F value is less than table value 2.78, therefore hypothesis Ho accepted and H1 is rejected. It is noted that post testing knowledge score of all variables regarding home accident prevention shows significant association with occupation as calculated F value is more than tabulated value 2.78 at 0.05 levels. It is noted that pre test knowledge score of variables introduction, burns falls, electric shock and poisoning accidents shows significant association with monthly family income as calculated F value is more than table value 2.78 at 0.05 level. Therefore hypothesis Ho is rejected and H1 is accepted.

Other all variables pre test knowledge score shows no association with monthly family income as calculated F value is less than table value2.78, therefore H0 accepted and H1 is rejected. It is noted that post test knowledge score of mother's shows significant association with monthly family income as calculated F value is more than table value 2.78 at 0.05 level of significance. Knowledge differs as monthly family income varies. Therefore hypothesis H1 accepted and H0 rejected It is noted that pre testing knowledge score of mothers shows no association with type of family as calculated F value is less than table value2.78 at 0.05 level of significance. Therefore hypothesis H0

accepted and H1 is rejected. It is noted that post test knowledge score of mother's shows association with type of family as calculated F value is more than table value 2.78 at 0.05 levels. Knowledge is more in joint families than nuclear due to elder member's advice, therefore hypothesis Ho rejected and H1 is accepted.

Conclusion

From this we can conclude that the pre test knowledge score of mothers shows no significant association with demographic variables most of the time but after giving information booklet it shows association with demographic variables in post test knowledge score. Which suggest instructional materials are useful for mothers in providing knowledge also help line numbers in case of emergency or accidents are printed on back side of booklet, which proved useful for them.

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