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A Cross-sectional Study for Determinations of Prevention Behaviors of Domestic Accidents in Mothers with Children Less than 5- year

Farbod Ebadi Fardazar[1], Kamyar Mansori[2], Mahnaz Solhi[1], *Syyedeh Shahrbanou Hashemi[3], Erfan Ayubi[4], Fatemeh Khosravi Shadmani[5], Salman Khazaei[6], Shiva Mansouri hanis[7]

[1]Department of Health Sciences and Health Education, School of Health, Iran University of Medical Sciences, Tehran, Iran. [2]Department of Epidemiology, School of Health, Kurdistan University of Medical Sciences, Sanandaj, Iran. [3]Department of Health Sciences and Health Education, School of Health, Mazandaran University of Medical Sciences, Sari, Iran. [4]Department of Epidemiology, School of Health, Tehran University of Medical Sciences, Tehran, Iran. [5]Research Center for Modeling in Health, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran. [6]Department of Epidemiology & Biostatistics, School of Public Health, Hamadan University of Medical Sciences, Hamadan, Iran. [7]School of Public Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Abstract

Background: Accidents are the first cause of death in children under 5- year, especially in low- and middle-income countries. The aim of this study was to identify the determinants of prevention behavior of domestic accidents in mothers of children fewer than 5 years old based on protection motivation theory (PMT).

***Materials and Methods*:** In this cross-sectional descriptive-analytic study, 190 mothers were randomly selected. The data collection tool was researcher made questionnaire about prevention behaviors of home accidents in children less than five years based on the structures of protection motivation theory.then collected data entered in the software SPSS-22 and were analyzed using descriptive and analytical statistical tests.

***Results*:** Mean of perceived response efficacy was in good level and mean of other structures of PMT were in moderate level. There was a significant correlations between the scores of perceived vulnerability (r=.39, P<0.05) and perceived severity, between scores of perceived response efficacy and self-efficacy (r=.47, P<0.05). In mothers with higher education, score of perceived response efficacy was higher (P<0.05). Mean of scores of perceived response efficacy and self- efficacy were higher in mothers who take care of their child themselves more than mothers who other people took care of their child (P<0.05).

***Conclusion*:** Mean score of perceived response was in good level and also mean scores of others structures were in moderate level .It seems that PMT can be used as a conceptual frame work for designing educational programs aimed to improve of prevention behaviors of home accidents in mothers with children less than 5 year.

Key Words: Children, Home accidents, Prevention, Protection motivation theory.

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Corresponding Author:

Syyedeh Shahrbanou Hashemi, Shahid Hemmat highway, IUMS, School of Health, Department of Health Services and Health Education, Iran University of Medical Sciences, Tehran, Iran.

Email: nahidhashemi202@gmail.com

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1- INTRODUCTION

Childhood injury is a major public health problem that requires urgent attention. Injury and violence is a major killer of children throughout the world, responsible for about 950 000 deaths in children and young people under the age of 18 years each year. Unintentional injuries account for almost 90% of these cases. In addition to the deaths; tens of millions of children require hospital care for non-fatal injuries. The burden of injury on children falls unequally. It is heaviest among the poor with the burden greatest on children in the poorer countries with lower incomes. Overall, more than 95% of all injury deaths in children occur in low-income and middle-income countries. The majority of these deaths occurred at home (1-3). In Iran, 64 percent of accidents that happen in children due to domestic accidents (4). Injuries are not inevitable; they can be prevented or controlled. In the Organization for Economic Cooperation and Development (OECD) countries, for example, the number of injury deaths among children under the age of 15 years fell by half between 1970 and 1995 (5). Until recently, little attention had been paid to the issue of injuries in low-income and middle-income countries. The lack of awareness of the problem compounded by the particular circumstances that these countries face, has meant that proven measures have not been implemented to the same extent as they have in high income countries.

Different theories of health education can be used to design an effective training plan for promoting safety and preventing from accidents injuries in children. Among these models, protection motivation theory is one of the models which for investigate the factors influencing on the motivation and ultimately behavior is used (6). In this model, it is assumed that acceptance of health behavior (protective behavior) recommended against heath risk is a direct action of person's motivation for protecting oneself. Rodgers stated that fear influences on protection motivation (or intend to do protective behavior against health risk) through five constructs and finally the protection motivation raises health behavior. These five construct include: **1**- perceived vulnerability: person has believed that he or she is vulnerable against the health risk. **2**- perceived intensity: person has believed that the risk is serious, **3**- the perceived response efficacy: a person expecting that a compatible response (protective behavior against a health risk) can remove risk, **4**- perceived response costs: person's estimation of any cost (e.g. money, person, time, attempt) that is associated with protective behavior, and **5**- perceived self-efficacy: person has believed that he or she can successfully carry out protective behavior (7-9).

Considering the above explanation and given that studies conducted about the effectiveness of protection motivation theory on children's accidents and injuries in Iran is limited; the aim of this study was to identify the determinations of prevention behaviors of domestic accidents in mothers with children less than 5- year referring to health centers in Joibar based on protection motivation theory (PMT).

2- MATERIALS AND METHODS

This study was a cross-sectional descriptive-analytic study. The study population consisted of 190 mothers with children under 5 years old referring to health centers of the in Joibar city, Mazandaran provine, Iran in 2015. Cochran's formula was used to calculate the sample size. Of the three urban health centers in this city, two centers were selected randomly, than among the mothers of active health records with children under 5- year in selected centers, 190 file randomly selected from each

center through random numbers table. Inclusion criteria consisted of having children less than 5-year, having active health records at the centre, would like to participate in the program, regular participation in training sessions and complete a questionnaire. Exclusion criteria included not having children less than 5-year of study, location changes and loss to follow up during the study.

Data collection tool in this study, researcher-designed questionnaire with interview about the prevention of accidents and injuries in children less than 5- year was based on protection motivation theory. This questionnaire consisted of 10 questions about the demographic characteristics, 4 question about perceived vulnerability, 6 questions about perceived intensity, 4 questions about perceived response efficacy, 5 questions about perceived response cost and 4 questions about self-efficacy about prevention of home accidents and injuries in mothers with children less than 5 year. The answers to these questions were based on a Likert scale, Its range was includes strongly agree, agree, no comment, disagree and strongly disagree. Minimum and maximum of score for each question was 1 and 5, respectively. The minimum and maximum scores were in perceived vulnerability from 4 to 20, perceived intensity 6 to 30, perceived response efficacy 4 to 20, perceived response cost 5 to 25 and self-efficacy 4 to 20. The criteria category of these variables was quarter. To assess the validity of a panel of ten health education and safety specialists was used. Validity Index (CVI) was obtained more than 0.79 and also validity ratio was more than 0.49 for all questions. The reliability of the questionnaire was measured by Cronbach's alpha after it was completed by 20 individual.

Results were as follow: perceived vulnerability 83.5%, perceived intensity 90.3%, perceived response efficacy 72.1%, perceived response cost 72.5%, self-efficacy 87.2%, and performance 75%.

In this study before obtaining informed consent and voluntary for mothers participating in the research, study objectives was described and make sure that the information remain confidential. Then data collected and introduced into SPSS, version 22 software and T-test, Chi-square, paired t-test, Pearson's correlation coefficients, Spearman's correlation coefficients and ANOVA were used to analyze the data.

3- RESULTS

Mean and standard deviation (SD) age of mothers and their children were 28.8 ± 5.2 and 2.1 ± 1.3 years, respectively. Fifty percent of these children were boy and also 71.6% of children were care at home by their mothers. Other demographic characteristics of participants are shown in (**Table.**1).

Mean, standard deviation, range of score attainable and mean percentage of maximum score attainable structures are shown in (**Table 2**); as can be seen the highest mean percentage of the maximum score attainable related to perceived response efficacy by 81%. According to criteria categories of quartile, the mean scores of perceived vulnerability, perceived intensity and perceived response cost in third quarter (moderate level) and the mean score of perceived response efficacy in the fourth quarter (good level) is located (**Table.2**).

Since the Kolmogorov-Smirnov test showed that the mean scores of structures have not normal distribution, Spearman's correlation coefficient was used for analyzing the correlation between structures, that results showed a significant positive correlation between perceived vulnerability with structures of perceived intensity (r=0.39; P=0.001) and perceived response efficacy (r=0.19; P=0.006) and with perceived response cost was observed

a significant negative correlation (r= -0.16; P=0.02). So that in the mothers who score of perceived vulnerability was higher, scores of intensity and perceived response efficacy were more but score of perceived response cost was lower. Also was showed a significant positive correlation between perceived intensity with perceived response efficacy (r=0.37; P=0.001) and with perceived response cost a significant negative correlation(r= -0.2; P=0.005). So that in the mothers who score of perceived intensity was higher, scores of intensity and perceived response efficacy were more, but score of perceived response cost was lower, perceived response cost and perceived response efficacy were lower. Also between perceived response efficacy with self-efficacy (r=0.47; P=0.001) and self-efficacy with and perceived response cost (r=0.11; P=0. 01) was observed a significant positive correlation (**Table.3**).

Spearman correlation coefficient test was showed a significant positive correlation between scores of perceived severity (r=0.21; P=0. 002) and perceived response efficacy (r=0.14; P=0. 04) with age of mothers; so that scores of perceived severity and perceived response efficacy was observed in older mothers. Also was showed a significant positive correlation between household of size with perceived intensity (r=0.19; P=0. 008) and perceived response cost (r=0.17; P=0. 015), but with self-efficacy was observed a significant negative correlation (r= -0.22; P=0. 002).

By using Chi- square test was observed a significant positive correlation between score of perceived response efficacy with maternal education (P= 0.012); so that in the mothers with higher education, score of perceived response efficacy was better. Also, ANOVA test showed that mean of perceived response efficacy and self-efficacy in the mothers who took care of their children more than mothers who other people took care of their child with P-value 0.004 and P<0.001,respectively . Also by using this test, only mean score of perceived vulnerability had significant difference in different classes of father job (P=0.028); so that mean score of perceived vulnerability in women whose husbands (child's father) was an employee or self-employed more than any other women whose husbands were workers or farmers.

Table 1: Frequency distribution of demographic characteristics of studied mothers

Variables	Number (%)
Gender	
Boy	95 (50)
Girl	95 (50)
Maternal occupation	
Housewife	152(80)
other	38(20)
Status of supervision	
By mother	136(71.6)
Other	54(28.4)
The number of children in the family	
1	177(93.2)
>1	13(6.8)
Household of size	
≤4	170(82.5)
>4	20(10.5)
Maternal education	
Academic	66(34.7)
Non-academic	124(65.3)
Paternal education	
Academic	49(25.8)
Non-academic	141(74.2)

Table 2: Mean, SD, min and max scores of PMT structures in studied mothers

Constructs	Mean± SD	Range of acquired score	Mean of the max score (%)
Perceived vulnerability	14.6(2.7)	4-20	73.5
Perceived intensity	20.7(3.9)	6-30	69
Perceived response efficacy	16.2(2.6)	4-20	81
Self-efficacy	14.9(2.6)	4-20	74.5
Perceived efficacy cost	16.2(3.8)	5-25	64.8

Table 3: Correlation coefficient matrix of PMT constructs in studied mothers

Constructs	Perceived vulnerability		Perceived intensity		Perceived response efficacy		Self-efficacy		Perceived efficacy cost		Behavior	
	r	P.V	r	P.V	r	P.V	r	P.V	r	P.V	r	P.V
Perceived vulnerability												
Perceived intensity	0.39	0.00										
Perceived response efficacy	0.19	0.00	0.37	0.00								
Self-efficacy	0.01	0.08	0.05	0.04	0.47	0.00						
Perceived efficacy cost	-0.16	0.02	-0.20	0.00	0.06	0.34	0.04	0.01				
Behavior	-0.34	0.03	-0.79	0.03	-0.54	0.94	0.55	0.62	0.28	0.13		

r= Correlation coefficient; P.V: P-value.

4- DISCUSSION

Prevention of domestic accidents in children less than 5 years is important matter and mothers play a critical role in this context. The aim of this study was to identify the determinations of prevention behaviors of domestic accidents in mothers with children less than 5- year referring to health centers in Joibar-Iran, based on protection motivation theory (PMT).

The results of this study showed that a significant negative correlation between perceived response cost with perceived vulnerability and perceived intensity; so that in the mothers with score of perceived response cost lower, score of perceived intensity was higher. These results were consistent with other similar which have been carried out in this field (10, 11). Although the value of this correlation is low, but trying to improve each of these two perceptions leads to another promotion. At current study there was significant positive correlation between perceived vulnerability with perceived response efficacy, so that in the mothers with scores of perceived vulnerability higher, scores response efficacy was more. These results were consistent with results of Wartele et al study which has been carried out in this field. (12); in fact whatever perception of mother be more about the vulnerability of child against domestic accidents, perceived response efficacy will be more and vice versa. Also in this study perceived response efficacy and perceived intensity was obtained significant positive correlation; so that mothers with score perceived response efficacy, perceived intensity was more, this finding was consistent with study PlotniKoff et al. which has been carried out in this field (13). Indeed promoting each of these two perceptions on another has an effect.

In our study, perceived vulnerability and perceived intensity had a significant positive correlation, that the results of the

study Koh et al. was inconsistent (14), but results of the studies Park (15) and Valigosky (16) was consistent; also, in our study, however, the correlation was low, but increase one of these two perceptions, leads to an increase another. At current study perceived response efficacy and perceived intensity was obtained significant positive correlation, consistent with us McCool et al. in their study pointed out significant relationship between these two constructs (17). This is a moderate correlation and measures to increase one of these two perceptions leads to an increase another.

According to findings of this study, a significant positive correlation obtained between scores of perceived severity and perceived response efficacy with age of mothers; so that scores of perceived severity and perceived response efficacy was observed in older mothers. These results were consistent with results of studies Carmel and Lowe (18, 19). So, measures to improve structures of perceived severity and perceived response efficacy should be a priority in younger mothers. Also in our study was observed a significant positive correlation between score of perceived response efficacy with maternal education that consistent with results of studies Helmes, Melamed and El Dib (20-22) .This finding reflects this fact that by higher the educational level, understand of mother has increased in this case that consistent response and protective behaviors against health risks can eliminate risks. Therefore, improving the educational level of mothers can affect on the prevention of domestic accidents in children under 5-year. In this research there was not observed significant relationship between employment status of mothers with all structures protection motivation theory, perhaps being a housewife majority of mothers was cause of this issue. Also was showed a significant correlation between household of size with perceived intensity, perceived response cost and self-efficacy; so that the mean scores of these perceptions were higher in families with fewer household of size. Therefore, prevention of domestic accidents in families with more people is an important priority.

4-1. Limitation

Collecting information through self-report, cross-sectional study and do it in a city were limitations of this study, so conducting the research in the larger society and carry out qualitative research in this area is recommended.

5- CONCLUSION

Mean score of perceived response efficacy in prevention behaviors of domestic accidents in mothers with children fewer than 5 years old was in good level and also mean scores of others structures were in moderate level. It seems that PMT can be used as a conceptual frame work for designing educational programs aimed to improve of prevention behaviors of home accidents in mothers with children less than 5- year.

6- CONFLICT OF INTEREST: None.

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