

## MOTHER'S ROLE IN PREVENTING CHILDHOOD HOME ACCIDENTS

### *O papel da mãe na prevenção de acidentes infantis domiciliares*

Artigo original

#### RESUMO

O trauma tem sido identificado como o maior problema de saúde pública na Turquia e internacionalmente. Na maioria dos países em desenvolvimento, crianças, especialmente na faixa de 0 a 6 anos de idade, estão em risco crescente de acidentes domésticos. O objetivo deste estudo foi desenvolver uma escala de identificação de medidas de segurança contra acidentes domésticos para mães que têm crianças de 0 a 6 anos e de avaliar a eficiência da educação dada a estas mães em prevenir suas crianças contra acidentes domésticos. O estudo foi realizado em duas fases. No primeiro estágio, uma escala tipo Lykert com 5 pontos, composta de 40 itens, foi desenvolvida. A fidedignidade e validade da escala foram testadas em 600 mães que tinham filhos menores de 6 anos e que foram aleatoriamente selecionadas dos registros de centros de atenção primária de Sakarya. O valor alfa de Cronbach da escala, o qual foi estudado para verificar a fidedignidade e a validade, foi determinado como 0,8205. No segundo estágio, um questionário e a escala desenvolvida pelo investigador foram aplicados em 30 mães aleatoriamente selecionadas. Em duas ocasiões, instruções foram dadas pelo investigador às mães, em seus domicílios, a respeito de prevenção de acidentes domiciliares, com intervalo de 10 dias. Na última sessão, foi entregue às mães um "Pequeno Guia para Mães na Prevenção de Acidentes Domiciliares em Crianças de 0 a 6 anos". Diferenças significativas foram encontradas entre os escores médios antes e após as atividades educativas (177,53±9,43 and 185,11±6,48), respectivamente. Após a educação, a taxa de acidentes demonstraram uma queda de 63,3% para 28,3%. Nós concluímos que mães que foram treinadas e receberam o pequeno guia tenderam a aumentar as medidas de segurança domiciliares e suas crianças foram vítimas de menos acidentes.

**Descritores:** 0-6 anos; Acidente doméstico; Prevenção

#### ABSTRACT

*Injury has been identified as a major public health problem in Turkey and internationally. In most developing countries, children, especially in 0 – 6 years age group, are at increased risk for home accidents. The aim of this study was to develop a scale for identification of safety measures against home accidents for mothers who have a child at 0-6 age group and to evaluate the efficiency of the education given to these mothers on preventing their children against home accidents. The study was performed in two phases. In the first stage, a Likert type scale with 5-points, consisting of 40 items, was developed. The reliability and validity of the scale was tested on 600 mothers who have children under 6 and were randomly selected from registration records of the primary health care centers of Sakarya. Cronbach alpha value of the scale which was studied for reliability and validity was found as .8205. In the second stage, a questionnaire and the scale developed by the investigator were applied to 30 randomly selected mothers. Instructions were given twice to the mothers by the investigator in their dwellings concerning the prevention of children from home accidents with a 10-day interval. In the last session, mothers were delivered a "Guide Booklet for Mothers to Prevent 0-6 Year Children from Home Accidents". Significant differences were found between the pre-education and post-education mean scores ( 177.53.±9.43 and 185.11 ±6.48 respectively). Following education, accident rates showed a dramatic decrease from 63.3% to 28.3%. We concluded that mothers who were trained and given a guide booklet tended to increase in house safety measures and their children were subject to fewer accidents.*

**Descriptors:** 0-6 age; Home accident; Prevention

Nursan Dede Çınar<sup>(1)</sup>  
Gülay Görak<sup>(2)</sup>

1) Sakarya University School of Health Sciences, Sakarya, Turkey

2) Chairman of Pediatric Nursing Department of Florence Nightingale College of Nursing, Istanbul University

Recebido em: 03/11/2006

Revisado em: 24/04/2007

Aceito em: 27/08/2007

## INTRODUCTION

At present, health care specialists have powerful influence on many aspects of children's diseases. However less care has been given to childhood accidents and the number of medical studies about childhood accidents is inadequate.

Accidents at home are an important cause of admission to hospital for children<sup>(1,2)</sup>. Injury has been identified as a major public health problem in Turkey and internationally. In most developing countries, children, especially 0 – 6 years age group, are at increased risk for home accidents. Every year, the mortality rate of children under 1 year of age increases because of injury, falling from high chairs, swallowing buttons, darting in front of cars, worse accidents, and burns<sup>(3-8)</sup>.

Most injuries occur at home, more often in the kitchen, bedroom, bathroom and terrace than anywhere else. Almost all of these injuries can be avoided if simple prevention measures are taken<sup>(9)</sup>.

Although the common reasons of mortality for children under 4 years age are gastroenteritis, respiratory system diseases, malnutrition and infectious diseases such as measles, accidents are the leading cause of mortality in the 5-14 yr-old age group. More than 30 % of all victims under 14 are killed in accidents<sup>(5,7,10)</sup>.

Most of the studies revealed that incidence of home accidents may be augmented by unsuspected dangers of equipments, playground activities and environmental factors. Although most of the mothers undoubtedly have positive influence on many aspects of child development, they seem to need alternative explanations about childhood accidents<sup>(7,11-13)</sup>.

The child mortality due to home accidents is too high to be ignored, both in Turkey and internationally. The nurses, besides all health care personnel, have an important responsibility in protecting the children from accidents. This, besides educating the families about the risk factors and protecting measures and minimizing the risk factors by using the newest technological designs, is also necessary to lessen the environmental negative effects as much as possible<sup>(3,5-7,11)</sup>.

## METHODS

This study was designed on a methodological and semi-experimental basis to develop a "Scale for Mother's Identification of Safety Measures Against House Accidents for Children of 0-6 Years Age Group" and to evaluate the efficiency of education given to mothers for preventing in-house child accidents.

The study was undertaken in two stages, including the development of the scale and giving education to mothers to avert in-house child accidents.

In the first stage, literature in Turkish and in English were reviewed and a draft scale was prepared with 32-item Likert type 3-point scale. As a result of the scope validation studies, the number of items were increased to 70 and the type of the scale was converted to a 5 –point Likert scale.

The study sample for the scale development included 600 mothers randomly selected from registration record of primary health care centers of Sakarya.

As a result of reliability evaluation, the number of items was decreased to 57 and internal validity was found as .7931 using Cronbach's Alpha. Seventeen items, which were found to have low item total score correlation values, were excluded, and the Cronbach's Alpha value of the resultant scale increased to 0.8205.

Each item of the scale was scored between 1 and 5. Items having negative statements were inversely scored. Maximum and minimum total scores of the scale were 200 and 40, respectively.

The scale was self-administered for literate mothers, and those who were illiterate were interviewed for obtaining responses. The duration of answering the scale ranged between 15 and 20 minutes.

In the second stage, 30 randomly selected mothers were administered a questionnaire concerning demographic data about themselves and their children and the scale developed by the investigator. Mothers who had been graduated from a school of at least the primary level, who were between the ages of 18 – 49, who had healthy children of 0 – 6 years, were housewife and had no communication problems were randomly selected for this group. They were given instructions two times by the investigator in their dwellings concerning the prevention of children from home accidents with a 10-day interval. In the last session, mothers were delivered a "Guide Booklet for Mothers to Prevent 0-6 Year Children from Home Accidents". This booklet which had been developed by the investigator included knowledge about the potential accidents to be faced by the children in home, such as falling, burning, drowning and poisoning, and the measures the mothers could take. The booklet included pictures and consisted of 13 pages. After each session, mothers were asked to fill the scale and results were evaluated by investigators.

Data were analyzed using SPSS (Statistical Package for the Social Sciences).

The consistency of the scale overtime was assessed using the test-retest method. Reliability was assessed using inter-item reliability and Cronbach's Alpha-coefficient.

Other data were evaluated using the percentage, mean, and standard deviation calculations t-test, and one-way analysis of variance (ANOVA).

## RESULTS AND DISCUSSION

Of the thirty children studied for this purpose, 16 were girls and 14 were boys. Forty per cent of these children were the single child, and 53% were the second child. Thirty-three per cent of the children were in the 0-1 age group, 37% were in the 2-3 age group, 20% were in the 4-5 age group and 10% were 6 years old.

Table I. Characteristics of family demographics.

Characteristics	n = 30	% *
<b>Mother's Education</b>		
Primary School	13	43.3
Pre-High School	5	16.7
High School	7	23.3
University	5	16.7
<b>Father's Education</b>		
Literate	1	3.3
Primary School	7	23.3
Pre-High School	5	16.7
High School	9	30
University	8	26.7
<b>Family Type</b>		
Simple Family	30	100
Broad Family	-	-
Other ....	-	-
<b>Occupation of Mother</b>		
Employee	-	-
Housewife	30	100
<b>Occupation of Father</b>		
Official	10	33.3
Worker	5	16.7
Self-Employed	14	46.7
Retired	1	3.3
<b>Health Insurance of Family</b>		
No Insurance	2	6.7
Officer Retirement Insurance	5	16.7
Labor Retirement Insurance	12	40
Tradesmen Retirement Insurance	9	30
Private Insurance	2	6.7
<b>Number of Person Living In House</b>		
3	12	40
4	6	20
5	10	33.3
6	2	6.7
<b>Children (Alive)</b>		
1	11	36.7
2	7	23.3
3	10	33.3
4	2	6.7

\* the percentage is based on " n "

When the demographic features of the families were studied, it was seen that the average age with the standard deviation for the mothers was  $29.3 \pm 4.55$ , and the same value was  $34.1 \pm 5.33$  for the fathers; the majority of the mothers (43,3 %) had been graduated from the primary school and the average education level of the fathers was higher than the mothers. It was found that the majority of the families consisted of three to five people and all were nuclear families. These results were consistent with the nation-wide results.

There was a difference between pre-education and post-education average scores of scale in the entire group ( $p < 0.001$ ). The Increase in the average of the scale scores after education of mothers is a positive progress and shows that how regular training is effective on performing .

Table II. Comparison table for Average Scale Points of mothers before and after education

INTERVIEW	n	X ± SD	“t”, “p”
Pre-education	30	177.53 ± 9.43	T= 4.11
*Post-education	30	185.11 ± 6.48	P<0.001

\*It is an average of scale points gathered after a month and two months from education.

Following mothers education, accident rates of children in home showed a dramatic decrease from 63.3% to 28.3%. Prior to education of mothers, the incidence of repetitive accidents found among children were, 3.3 % burns, 56.7 % falls and 3.3 % poisoning. After one month from education, 3.3 % burns and 33.3 % fallings had occurred and there were no poisoning found.

Table III. Incidence rates for accidents in children before and after the mother’s education n=30

Type of accident	Education					
	Before		1 month later		2 months later	
	n	%	n	%	n	%
Burned	1	3.3	1	3.3	1	3.3
Fell down and wounded	17	56.7	10	33.3	5	16.7
Poisoned	1	3.3	-	-	-	-
<b>Total</b>	<b>19</b>	<b>63.3</b>	<b>11</b>	<b>36.6</b>	<b>6</b>	<b>20</b>

Thousands of children are injured in home accidents and the morbidity rate is more higher than the other diseases<sup>(5,14,15)</sup>. Many studies focus on the idea that “what

makes these accidents even more tragic is that they can be prevented – if only mothers knew how”<sup>(12,15-17)</sup>. Our results also support the previous literature and also show the important role of the education in preventing from accidents.

Consequently, mothers who have taken sufficient education about home accidents and delivered a booklet about the safety of home accidents may remember the safety rules more easily and prevent their children more effectively than mothers who have not.

In this study, we found highly significant differences between the means of pre-education and post-education scale scores ( $177.53 \pm 9.43$  and  $185.11 \pm 6.48$  respectively). Another criteria being taken as basis in determining the efficiency of the education given to the mothers about the prevention of the children from home accidents was the comparison between the pre- and post-education incidence rates of childhood home accidents.

## CONCLUSION

As a result, we concluded that mothers who were trained and given a guide booklet tended to increase in house safety measures and their children were subject to fewer accidents.

## REFERENCES

1. Farchi S, Rossi GP, Chini F, Camilloni L, Ciorgio DM, Guasticchi G, Borgia P. Unintentional home injuries reported by an emergency-based surveillance system: Incidence, hospitalisation rate and mortality. *Accid Anal Prev* 2006;38:843-53
2. Gulliver P, Dow N, Simpson J. The epidemiology of home injuries to children under 5 years in New Zealand. *Aust. N2. J PublicHealth* 2005;29(1):2934.
3. Lauri S. Health promotion in child and family health care: the role of Finnish public health nurses. *Public Health Nurs* 1994;11:32-7
4. Lowenberg SJ. Health promotion and the “Ideology of Choice”. *Public Health Nurs* 1995;12:319-23
5. Postacı F. Childhood Period Accidents. Istanbul: Istanbul University Child Health Institute, Mother and Child Health, Postgraduate Thesis; 1992.
6. Stone DH, Jaruis S, Pless B. The continuing global challenge of injury. *BMJ* 2001;322:1557-8.
7. Şahin S. Determining the accident risks in the 0-6 year-old children in Yalova province of Istanbul by Using

- Framingham Safety Search (FSS). Istanbul: Istanbul University Child Health Institute, Postgraduate Thesis; 1994.
8. Watson WL, Ozanne-Smith J. Injury surveillance in Victoria, Australia: developing comprehensive injury incidence estimates. *Accid Anal Prev* 2000;32:277-86
  9. Mukerji G, Chamania S, Patidar GP, Gupta S (2000). Epidemiology of paediatric burns in Indore, India. *Burns* 2000;27(1):33-8.
  10. Stevens DC. Injury prevention and epidemiology. in: Barkin MR, editor. *Pediatric emergency medicine concepts and clinical practice*. St. Louis: Mosby Year Book; 1992. p. 14-22
  11. Bass LJ, Christoffel KK, Widome M, Boyle W, Scheidt P, Stanwick R, Roberts K. Childhood injury prevention counseling in primary care settings: a critical review of the literature. *Pediatrics* 1993;92(4):544-50.
  12. Yazıcı S. The self-caring power of the mothers, their skills for solving the care problems of the healthy children, and the Educative Role of Nurses in This Process. Istanbul: Istanbul University the Institute of Medical Science, Nursing Department, Doctorate Thesis; 1995.
  13. Yıldız S. The evaluation of the poisoning cases hospitalized in Istanbul Medical School Child Clinic, and the role of nurse in prevention. 1<sup>st</sup> National Symposium on the Mother and Child Health Nursing, Istanbul: Istanbul University Publishing;1992 p.161-7.
  14. Dart CR, Rumack HB. Poisoning. In: Hay WW, Groothuis JR, Hayward AR, Levin MJ, editores. *Current pediatric diagnosis & treatment*. 12<sup>th</sup>ed. Appleton & Lange; 1995. p.116-9
  15. Lovejoy HP, Robertson OW, Woolf DA. Poison centers, poison prevention and the pediatrician. *Pediatrics* 1994;94:220-3.
  16. Longsdon AD. Conceptions of health and health behaviors of preschool children. *J Pediatr Nurs* 1991;6:396-406.
  17. Jordan AE, Duggan KA, Hardy BJ. Injuries in children of adolescent mothers: Home safety education associated with decreased injury risk. *Pediatrics* 1993;91:481-6.

**Corresponding Address:**

Nursan Dede Çınar

Sakarya Üniversitesi Sağlık Yüksekokulu

54187 Esentepe Kampüsü

Tel: +90 264 295 66 13 / 6605

GSM: +90 532 498 27 30

E-mail: ndede@sakarya.edu.tr