

## The Knowledge Level of Parents about Kitchen Accidents Occuring in Children Aged 1 - 5 Years Old

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Received: August 07, 2021; Published: August 30, 2021

### Abstract

**Objective:** Kitchen accidents occurs in children under 5 years of age due to negligence are seen as an important cause of morbidity and mortality. In our study, we aim to measure the level of knowledge and increase the awareness of parents about kitchen accidents that can be seen common in childhood between the ages of 1 - 5.

**Materials and Methods:** It was carried out with a total of 158 parents whom has children between the ages of 1 - 5 who applied to the Pediatric outpatient clinic between January and March 2021. The questionnaire consisting of 2 parts asked the socio-demographic information of the parents, information about children and the accidents that may occur in the kitchen.

**Results:** The percentage of keeping flammable/burning tools such as matches/lighters used in the kitchen out of the reach of children is 88.6%; the cleaning items are kept out of the reach of their children 63.9%. A total of 20 (80%) out of 25 university graduates who knew that, the pot and pan handles inward away from the edge of the stove during cooking, and 6 out of 20 (30%) who did not not educated + primary school graduates were found to be significant ( $p = 0.001$ ).

**Conclusion:** It emphasizes the need to improve parents' knowledge of kitchen accident injuries. Healthcare providers, especially hospitals, should inform families about accidents and precautions that may occur in the kitchen in pediatric and pediatric surgery clinics and pediatric emergency services.

**Keywords:** Neglect; Household Accidents; Children; Kitchen Accidents; Parents

### Introduction

The American Academy of Pediatrics (AAP) defines neglect as a behavior that can negatively affect in the physical, emotional or psychological areas that are evident and continuing in the care of the child in the protective decisions made or the behaviors implemented by a parent/caregiver [1]. Childhood-age accidents as a result of neglect of safety continue to be the leading cause of death and are the fourth leading cause of death according to World Health Organization (WHO) data [2]. Accidents occurring in the home are less frequently recorded, and the awareness level of parents is lower than other causes of accidents. The reason for the lower rate of notification and

recording in such accidents is that the families do not approach such accidents seriously and did not take the necessary precautions in a timely manner [3].

The childhood period under the age of 5, when the perception of threat does not occur and cannot fully provide its own safety and care, appears to be a more risky period in terms of domestic accidents that may result in mortality and morbidity [4,5]. Kitchens, where the majority of home accidents occur, are places that may pose the most danger to babies and children, and necessary precautions should be taken before possible accident situations [6].

### Aim of the Study

The aim of this study is to evaluate the knowledge level of parents about the accidents that may occur in the kitchen related to children and to increase their awareness.

### Materials and Methods

The study was planned in a descriptive and prospective type and was conducted with a total of 158 parents with healthy children between the ages of 1-5 who applied to the Child Health and Diseases Polyclinics of Aksaray University Training and Research Hospital between January - March 2021.

Families with children under 1 and over 5 years of age and families of children with a chronic disease that prevents them from moving on their own (cerebral palsy, autism spectrum disorder, mental retardation) were not included in the study.

A questionnaire was applied to collect the data. The survey applied consists of two parts. In the first part, the demographic information of the participants (age, education level, type of work, the region they live in and the number of children they have) were asked. In the second part of the questionnaire, the precautions for frequent accidents in the kitchen were asked to the participants with 3 options (yes, no, I have no information). Among the questions:

A total of 7 questions which the protection precautions as "Cleaning items used in the kitchen; knives and cutting tools; flammable/burning tools such as matches/lighters are kept in a place where children cannot easily reach" that children should not have easy access to; Electronic protection as "electrical kitchen appliances used in the kitchen are stored/kept out of the reach of children"; Cooking and stove safety as "Soups and hot drinks are not placed in front of children alone, children are kept away from the stove while cooking, the pot and pan handles inward away from the edge of the stove during cooking were asked.

### Ethics

Written informed consent was obtained from all participants (parents) after explaining the necessary explanation and study procedures to the participants. In addition, they were informed about the purpose and method of the study before the written informed consent was signed. This study was conducted in accordance with the World Medical Association Code of Ethics (Helsinki Declaration). This questionnaire was approved by the Aksaray University Ethics Committee (Number: 2020/13-25). Participants were assured that their participation was voluntary and that the anonymity, confidentiality and confidentiality of the data was guaranteed.

### Statistical analysis

The data obtained in the study were given as median (min-max), mean (standard deviation) and number (percentage). Normal distribution was measured with the Shapiro-Wilk test. When comparing two independent groups using qualitative data that did not conform to normal distribution, Pearson chi-square test was used, and Fisher's exact chi-square test was used where appropriate. Binary logistic

regression analysis was used to examine multiple independent variables in two categorical options. A p value of <0.05 was considered statistically significant in statistical analysis. IBM SPSS Statistics 22.0 program was used in the analyzes.

**Results**

The study was conducted with a total of 158 participants, ages 18 - 42. 21.5% (34 people) of the participants were men and 79.5% (134 people) were women. The average age of the parents is 30.3 ± 4.8; It was 30.7 ± 5.1 in men and 30.2 ± 4.78 in women. 60.8% of the participants were living in the city and 39.2% in the rural area. 25 (15.8%) university graduates, 66 (41.8%) high school graduates, 47 (29.7%) secondary school (8th grade) graduates, 16 (10.1%) primary school graduates and there were 4 people (2.5%) who were not educated. 41.1% of the participants stated that they did not work full time, 19% half day and 39.9% did not work. Considering the number of children, it was 33 (20.9%) who had 1 child, 81 (51.3%) person had 2 child, 32 (20.3%) person had 3 child and 12 person had ≥4 children (7%, 6) (Table 1).

	<b>Total N=158 (%)</b>	<b>Female N=124 (%)</b>	<b>Male N=34 (%)</b>
Age	30.3 ± 4.85	30.2 ± 4.78	30.7 ± 5.17
<b>Living Area</b>			
City	96 (60.8)	82 (66.1)	14 (41.2)
Rural	62 (39.2)	42 (33.9)	20 (58.8)
<b>Education Level</b>			
Not Educated	4 (2.5)	4 (3.2)	0 (0)
Primary	16 (10.1)	15 (12.1)	1 (2.9)
Secondary (8 <sup>th</sup> grade)	47 (29.7)	26 (21)	21 (61.8)
High School	66 (41.8)	61 (49.2)	5 (14.7)
University and above	25 (15.8)	18 (14.5)	7 (20.6)
<b>Working Status</b>			
Full-time	65 (41.1)	42 (33.9)	23 (67.6)
Half-time	30 (19)	21 (16.9)	9 (26.5)
Not working	63 (39.9)	61 (49.2)	2 (5.9)
<b>Burning tools such as matches/lighters used in the kitchen are at a height that children cannot easily reach</b>			
Yes	140 (88.6)	110 (88.7)	30 (88.2)
No	18 (11.4)	14 (11.3)	4 (11.8)
<b>The cleaning items used in the kitchen are at a height that children cannot easily reach</b>			
Yes	101 (63.9)	80 (64.5)	21 (61.8)
No	53 (33.5)	44 (35.5)	9 (26.5)
I have no information	4 (2.5)	0 (0)	4 (11.8)
<b>Knives and cutting tools are kept out of the reach of children</b>			
Yes	126 (79.7)	100 (80.6)	26 (76.5)
No	32 (20.3)	24 (19.4)	8 (23.5)
<b>During cooking and using the stove children are a safe point away from the stove</b>			
Yes	149 (94.3)	118 (95.2)	31 (91.2)

No	9 (5.7)	6 (4.8)	3 (8.8)
<b>Hot drinks (water, soup) are not put in front of the child alone</b>			
Yes	150 (94.9)	119 (96)	31 (91.2)
No	8 (5.1)	5 (4)	3 (8.8)
<b>Electrical appliances are out of reach of children</b>			
Yes	116 (73.4)	95 (76.6)	116 (73.4)
No	32 (20.3)	25 (20.2)	32 (20.3)
I have no information	10 (6.3)	4 (3.2)	10 (6.3)
<b>The pot and pan handles inward away from the edge of the stove during cooking</b>			
Yes	90 (57)	69 (55.6)	21 (61.8)
No	44 (27.8)	39 (31.5)	5 (14.7)
I have no information	24 (15.2)	16 (12.9)	8 (23.5)

**Table 1:** Socio-demographic information of parents and their knowledge of kitchen accidents.

The percentage of keeping flammable/burning tools such as matches/lighters used in the kitchen out of the reach of children was 88.6%, and the percentage of keeping cleaning items out of the reach of children was 63.9%. The percentage of the pot and pan handles inward away from the edge of the stove during cooking was 57%, and the percentage of knives/cutting tools in the kitchen to be kept out of the reach of children was 79.7% (Table 1).

In the current study, common kitchen accidents were compared with gender factors, and there were 100 (80.6%) women (80.6%) and 26 (76.5%) men ( $p = 0.592$ ) who stated that knives/cutting tools were kept out of reach of children. It was found significantly that 80 (64.5%) of the 124 mothers were kept the cleaning items used in the kitchen in places where out of reach of children and 44 mothers (35.5%) were not; Of the 34 fathers, 21 (61.8%) kept the cleaning items out of reach of children, 9 (26.5%) were not, and 4 (11.8%) had no knowledge ( $p = 0.001$ ). 95 (76.6%) of mothers and 21 (61.8%) of fathers were found to know that electrical household appliances used in the kitchen were stored/kept out of the reach of their children ( $p = 0.008$ ) (Table 2). There was no significant relationship between the gender factor and other causes of accidents in the kitchen.

The age variable in our data was categorized in 3 classes and compared with the accidents in the kitchen, a total of 150 (94.9%) participants who stated that hot drinks would not be placed in front of the child alone: All of the participants between the ages of 18 - 27, 109 people out of 115 people between the ages of 28 - 37 (94.8%) and 5 (71.4%) out of 7 persons between the ages of 38 - 47 ( $p = 0.007$ ).

When the relationship between the region and the accidents was examined, it was determined that 65 (67.7%) out of 96 people living in the city and 36 (58.1%) out of 62 people living in the rural areas kept the cleaning items used in the kitchen in places where children could not reach ( $p = 0.032$ ). Considering the situation that electrical household appliances are stored/kept out of reach of children, 81.3% ( $n = 78$ ) of the participants living in the city and 61.3% ( $n = 38$ ) of the participants living in the rural areas was determined significantly ( $p = 0.021$ ).

When the educational status of the participants is analyzed in 4 groups by combining the groups stating that they are primary school and not having education: 20 (80%) out of 25 university graduates, 38 (57.6%) out of 66 high school graduates, 26 (55.3%) out of 47 secondary school (8<sup>th</sup> grade) and 6 out of 20 people (30%) primary school + non-educated in total was found that the pot and pan handles

inward away from the edge of the stove during cooking (p = 0.001). According to their education group, 23 (92%) of them were university graduates and 66 people (74.2%) were high school graduates, out of 116 people who stated that electrical household appliances were kept out of reach of children (p = 0.008). It was found that there were 23 (92%) out of 25 university graduates and 41 (62.1%) out of 66 high school graduates that the cleaning items used in the kitchen kept out of reach of children (p = 0.002) (Table 2).

	Working Status n (%)			p	Education Level n (%)				p	Living area		p	Gender		p
	Full-time n=65	Half Day n=30	Not working n=63		Primary <sup>†</sup> n=20	Secondary n=47	High School n=66	University and above n=25		City n=96	Rural n=62		Female n=124	Male n=34	
<b>Burning tools such as matches/lighters used in the kitchen are at a height that children cannot easily reach.</b>															
Yes	57 (87.7)	28 (93.3)	55 (87.3)	0.662	16 (80)	40 (85.1)	59 (89.4)	25 (100)	0.152	83 (86.5)	57 (91.9)	0.290	110 (88.7)	30 (88.2)	0.939
No	8 (12.3)	2 (6.7)	8 (12.7)		4 (20)	7 (14.9)	7 (10.6)	0 (0)		13 (13.5)	5 (8.1)		14 (11.3)	4 (11.8)	
<b>The cleaning items used in the kitchen are at a height that children cannot easily reach. *</b>															
Yes	44 (67.7)	25 (83.3)	47 (74.6)	0.266	7 (35)	30 (63.8)	41 (62.1)	23 (92)	0.001	65 (67.7)	36 (58.1)	0.218	80 (64.5)	21 (61.8)	0.767
No	21 (32.3)	5 (16.7)	16 (25.4)		13 (65)	17 (36.2)	25 (37.9)	2 (8)		31 (32.3)	26 (41.9)		44 (35.5)	13 (38.2)	
<b>Knives and cutting tools are kept out of the reach of children.</b>															
Yes	47 (72.3)	26 (86.7)	53 (84.1)	0.145	13 (65)	37 (78.7)	55 (83.3)	21 (84)	0.317	79 (82.3)	47 (75.8)	0.322	100 (80.6)	24 (76.5)	0.592
No	18 (27.7)	4 (13.3)	10 (15.9)		7 (35)	10 (21.3)	11 (16.7)	4 (16)		17 (17.7)	15 (24.2)		24 (19.4)	8 (23.5)	
<b>In cooking and using the stove. children are a safe point away from the stove.</b>															
Yes	62 (95.4)	28 (93.3)	59 (93.7)	0.885	18 (90)	43 (91.5)	64 (97)	24 (96)	0.496	90 (93.7)	59 (95.2)	0.501	118 (95.2)	31 (91.8)	0.374
No	3 (4.6)	2 (6.7)	4 (6.3)		2 (10)	4 (8.5)	2 (3)	1 (4)		6 (6.3)	3 (4.8)		6 (4.8)	3 (8.8)	
<b>Hot drinks (water, soup) are not put in front of the child alone.</b>															
Yes	61 (93.8)	27 (90)	62 (98.4)	0.195	19 (95)	44 (93.6)	62 (93.9)	25 (100)	0.650	90 (93.7)	60 (96.8)	0.326	119 (96)	31 (91.2)	0.259
No	4 (6.2)	3 (10)	1 (1.6)		1 (5)	3 (6.4)	4 (6.1)	0 (0)		6 (6.3)	2 (3.2)		5 (4)	3 (8.8)	
<b>Electrical appliances are out of reach of children. *</b>															
Yes	44 (67.7)	25 (83.3)	47 (74.6)	0.266	16 (80)	28 (59.6)	49 (74.2)	23 (92)	0.023	78 (81.3)	38 (61.3)	0.06	95 (76.6)	21 (61.8)	0.008
No	21 (32.3)	5 (16.7)	16 (25.4)		4 (20)	19 (40.4)	17 (25.8)	2 (8)		18 (18.7)	24 (38.7)		29 (23.4)	13 (38.2)	
<b>The pot and pan handles inward away from the edge of the stove during cooking</b>															
Yes	34 (52.3)	23 (76.7)	33 (52.4)	0.018	6 (30)	26 (55.3)	38 (57.6)	20 (80)	0.001	54 (56.3)	36 (58.1)	0.890	69 (55.6)	21 (61.8)	0.089
No	16 (24.6)	4 (13.3)	24 (38.1)		10 (50)	8 (17)	23 (34.8)	3 (12)		28 (29.2)	16 (25.8)		39 (31.5)	5 (14.7)	
I have no information	15 (23.1)	3 (10)	6 (9.5)		4 (20)	13 (27.7)	5 (7.6)	2 (8)		14 (14.6)	10 (16.1)		16 (12.9)	8 (23.5)	

Table 2: The Factors which affecting the kitchen accidents.

\* I have no information option has been combined with a no answer.

† Those who did not receive education and graduated from primary school were combined.

When the factors (gender, age, working status, education level, living area and number of children) that affect keeping the cleaning items used in the kitchen in places that cannot be reached by children are examined by logistic regression analysis: in cases where the education level increases, there were a 0.44 times decrease in keeping the cleaning items in the wrong places (OR: 0.435, 95% CI: 0.278 - 0.682,  $p = 0.001$ ).

### Discussion

Home accidents are an important preventable problem that causes mortality/morbidity in childhood, especially children under the age of 5 who do not have the ability to protect themselves. More than 94% of child deaths from accidents in underdeveloped and developing countries; In developed countries, approximately 40% of the deaths of children under the age of 18 occur as a result of an injury, and home accidents have an important place in these injuries. This situation shows that the level of development alone is not adequate and that the precautions are of vital importance [2,7,8]. Understanding the risk factors in children's kitchen accidents is essential not only to change current behavior, but also to educate parents and develop the necessary interventions [9,10].

Accidental drinking of chemicals called corrosive substances (bleach/sink openers, dishwashers/washing machine detergents) is common in childhood in play age [9,11]. According to the 2020 report of the CDC (USA Centers for Disease Control and Prevention), 36.7% of the total 28,158 cases admitted to pediatric emergencies, after accidental intake of cleaning agents were children aged 0 - 5 [12]. This situation shows that parents and especially mothers should keep the cleaning items in the kitchen out of the reach of children. In another study conducted by CDC [13], the rate of parents who stated that they had knowledge how to keep cleaning items out of the reach of children was 73%, while this rate was found to be 64.9% in current study. It was determined that the rate of keeping cleaning items out of the reach of children was found to be higher in parents with a university graduates than parents with a lower education level ( $p = 0.002$ ), and parents with higher education levels have a 0.44-fold decrease in the rate of keeping their cleaning items in the wrong places compared to other parents (OR: 0.435, 95% CI: 0.278 - 0.682,  $p = 0.001$ ).

Childhood burns are the third most common cause of fatal childhood injuries, after motor vehicle accidents and drowning. Approximately 50% of childhood burns with bimodal age distribution are seen in childhood between the ages of 0 - 5, while the rest are mostly seen in adolescence [14-16]. Approximately 50% of childhood burns with bimodal age distribution are seen in childhood between the ages of 0 - 5, while the rest are mostly seen in adolescence. Keeping the child close to the stove and the pot/ pan handles outward away from the edge of the stove during cooking are the most common causes of burns [17]. In the study conducted by Başaran [18] with children with hand burns, 88.8% of the burn cases occurred indoors and 21.3% of them were the result of negligence. It was one of the important findings we found in our study that the rate of those who knew that the pot and pan handles inward away from the edge of the stove during cooking was 80% for those who graduated from university and above, while this rate decreased to 30% in parents who were not educated and graduated from primary school ( $p = 0.001$ ). This result showed us that the education to be given to the parents can reduce the accident rates that may occur as a result of negligence and increase the awareness level of the parents.

Electric shock is the most common cause of injury or death for children associated with electrical appliances. Damaged, frayed or misused electrical appliances, and unprotected sockets are the most common causes of electric shock. Biting cables by children during infancy, forgetting the electrical appliances on the socket, and the presence of blenders and mixers in drawers accessible to children are among the most common causes of accidents in the kitchen [19-21]. Erkal [22] stated in his study that the rate of those who took the precautions of keeping electrical household appliances away from children was 1.7%. It was found that there were 95 mothers (76.6%) out of 124 mothers (76.6%) and 21 (61.7%) out of 34 fathers who had knowledge that electrical appliances should be stored/kept in places where children could not reach ( $p = 0.008$ ).

### Conclusion

The current study highlights the need to improve parents' knowledge of kitchen accident injuries. Healthcare providers, especially hospitals, should inform parents about accidents in pediatric and pediatric surgery clinics and in pediatric emergency services where families apply. In addition, training and information leaflets on kitchen accidents that may occur as a result of negligence, can be created

as part of the major preventive services offered to the public by primary health care services to reduce morbidity and improve survival after these injuries.

### Acknowledgements

The authors are thankful to all our parents who voluntarily participate in the study.

### Conflict of Interest

The authors disclosed no conflict of interest during the preparation or publication of this manuscript.

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**Volume 10 Issue 9 September 2021**

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