

# Factors Associated with Mothers' Knowledge and Practices Regarding First Aid for Burns in Children Aged 0–6 Years

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## ABSTRACT

Burn injuries in early childhood remain a significant public health concern, and appropriate first aid by caregivers is crucial in reducing complications. This study aimed to determine mothers' knowledge and practices regarding burn first aid and to identify associated factors.

This descriptive cross-sectional study was conducted between August 2024 and January 2025 with 320 mothers of children aged 0–6 years attending outpatient clinics. Data were collected through face-to-face interviews using a Demographic Information Form and a researcher-developed Burn First Aid Knowledge and Practices Assessment Form. Descriptive statistics and chi-square tests were used for analysis.

The mean age of mothers was  $30.61 \pm 6.50$  years. Of the participants, 42.2% reported a previous burn incident in their child, most commonly among children aged 0–3 years (66.7%) and males (59.3%). Scald burns were the most frequent type (58.7%). The majority of mothers (83.8%) had not received prior first aid training, although 85.9% expressed willingness to receive it. Most mothers (88.4%) considered their knowledge insufficient, and 92.2% wanted further education. Both appropriate and harmful traditional practices were reported. Educational level and employment status were significantly associated with perceived adequacy of burn first aid knowledge ( $p < 0.05$ ).

Mothers' knowledge and practices regarding burn first aid were inadequate, despite a high willingness to learn. Targeted, community-based educational interventions led by nurses are essential to improve caregivers' competencies and reduce harmful practices.

**Keywords:** Burn, Child, First Aid, Nurse, Traditional Practices

## Introduction

Childhood burns continue to be a significant public health issue among preventable injuries in children worldwide (1). Children under the age of six, in particular, are at high risk for burn injuries due to their developmental characteristics, tendency to explore their surroundings, and limited ability to assess dangers (2). A large proportion of burns in this

age group are scald burns resulting from contact with hot liquids (3). A significant portion of childhood burns occur in the home environment, and first aid is most often administered by parents (4).

First aid measures administered in the first few minutes following a burn injury can directly affect the depth of tissue damage, the level of pain, the risk of infection, and the healing process (5). Current burn care guidelines recommend cooling the burn area with

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cold running water for at least 20 minutes as soon as possible (6). However, studies conducted in various countries show that parents' and caregivers' knowledge of burn first aid is often insufficient (7,8). Furthermore, it is reported that unscientific practices such as applying ice, toothpaste, yogurt, tomato paste, and various herbal products are still widely used (9,10).

Mothers, who bear primary responsibility for child care, are usually the first to intervene in the event of burns occurring in the home (11). Therefore, mothers' knowledge and practices regarding burn first aid have a significant impact on children's health outcomes (11,12). Studies show that a significant proportion of mothers consider their knowledge of burn first aid to be insufficient and feel a need for education on this topic (13–15). Incorrect first aid practices, on the other hand, can lead to an increased risk of complications, prolonged recovery times, and increased use of health care services (16).

Nurses play a crucial role in preventing childhood injuries, improving parents' health literacy, and promoting evidence-based first aid practices (17,18). Public health nurses, in particular, can contribute to the protection of children's health by identifying knowledge gaps among caregivers and correcting incorrect practices through community-based education programs (19). Therefore, assessing mothers' knowledge and practices regarding first aid for burns is important for planning effective education programs.

This study was conducted to determine the first aid knowledge and practices regarding burns among mothers of children aged 0–6 years and to examine the factors associated with these knowledge and practices.

## Materials and Methods

**Research Design:** This study was carried out in a descriptive and cross-sectional design to evaluate the first aid knowledge and practices of mothers with children aged 0–6 years and to determine the factors affecting them.

**Location and Time of the Study:** This study was conducted at a tertiary care hospital between August 2024 and January 2025.

**Population and Sample:** The study population consisted of mothers with children aged 0–6 years who visited the hospital's obstetrics and gynecology or pediatric outpatient clinics for any reason during the specified dates. No sample selection was performed; the aim was to include all mothers who were reachable during the study

period and met the inclusion criteria. Therefore, no sample size calculation was performed. A total of 362 mothers who met the study criteria were reached during the study period; 320 of them agreed to participate and were included in the study, while 42 declined to participate.

**Inclusion and Exclusion Criteria:** Mothers who had a child aged 0–6 years, were willing to participate in the study, and had no communication difficulties were included in the study. Mothers who did not have a child aged 0–6 years, refused to participate in the study, experienced communication difficulties during the data collection process, or provided incomplete data were excluded from the study.

**Research Instruments and Processes:** The empirical data for this study were obtained through a face-to-face interview methodology utilizing the "Introductory Information Form" and the "First Aid in Burns Knowledge and Practices Assessment Form," which were developed by the researcher in accordance with the extant literature (8,13,20).

**Descriptive Information Form:** This instrument comprised inquiries regarding the demographic characteristics of the mothers within the research cohort, including age, educational attainment, employment status, family income, type and location of residence, number of offspring, incidence of previous burns in the child, and identification of the causative factors for the burns.

**Form for Assessing Knowledge and Practices of First Aid for Burns:** Developed by researchers in accordance with the relevant literature. The form consists of questions designed to assess mothers' knowledge of first aid for burns, their application behaviors, where they learned these practices, their perceptions regarding the adequacy of their intervention knowledge, and their needs regarding first aid training.

To ensure the content validity of the form, the opinions of a total of 12 experts in the fields of public health nursing, pediatric nursing, and emergency care were sought. The expert evaluations were analyzed using the Davis technique. A content validity index (CVI) was calculated for each item, and items with a CVI value below 0.80 were reviewed and revised as necessary. It was determined that the CVI values for all items were at an acceptable level, and the final version of the form was established.

To assess the form's clarity and feasibility, a pilot study was conducted with 10 mothers; necessary

**Table 1:** Socio-Demographic Characteristics of the Mothers Participating in the Study

| Variable                                 |                                 | N   | %    |
|------------------------------------------|---------------------------------|-----|------|
| Mother's age*                            | 30.61±6.50                      |     |      |
| Mother's educational background          | Illiterate                      | 92  | 28.8 |
|                                          | Elementary school               | 98  | 30.6 |
|                                          | High school and above           | 130 | 40.6 |
| Mother's employment status               | Employed                        | 54  | 16.9 |
|                                          | Unemployed                      | 266 | 83.1 |
| Family income                            | Income is less than expenses    | 140 | 43.8 |
|                                          | Income equals expenses          | 145 | 45.3 |
|                                          | Income is greater than expenses | 35  | 10.9 |
| Family type                              | Nuclear                         | 211 | 65.9 |
|                                          | Extended                        | 109 | 34.1 |
| Place of residence                       | Urban                           | 204 | 63.7 |
|                                          | Rural                           | 116 | 36.3 |
| Number of children                       | 1                               | 60  | 18.8 |
|                                          | 2                               | 92  | 28.7 |
|                                          | 3 or more                       | 168 | 52.5 |
| Status of first aid training             | Yes                             | 52  | 16.2 |
|                                          | No                              | 268 | 83.8 |
| Interest in receiving first aid training | Yes                             | 275 | 85.9 |
|                                          | No                              | 45  | 14.1 |

\*Mean ± standard deviation

revisions were made to the statements based on the pilot study results. Participants in the pilot study were not included in the research sample.

Since the form is not a scale but consists of items designed to assess knowledge and application status, the internal consistency coefficient (Cronbach's alpha) was not calculated.

**Data Analysis:** Descriptive statistics in the study were determined with mean and standard deviation for continuous variables and expressed with number and percentage for categorical variables. The Chi-square test was performed to examine the relationships between categorical variables related to the mother and the family, as well as between the willingness to receive first aid training and perceptions of the adequacy of first aid knowledge; Pearson Chi-square values were considered. Prior to the analyses, the assumptions of the Chi-square test were evaluated, and all expected cell frequencies were found to be adequate. Therefore, the use of the Pearson Chi-square test was deemed appropriate. A priori power analysis was not performed, as the study was based on the maximum number of participants that could be reached within the study period; however, the sample size was considered sufficient to detect statistically significant

differences. Statistical significance level was set at 5%.

**Ethical Approval:** This study was conducted with the approval of a Non-Interventional Clinical Research Ethics Committee (Decision No: 2022/04-15). In addition, institutional permission was obtained from the relevant hospital where the study was conducted. Written and verbal informed consent was obtained from all participants prior to data collection.

## Results

The average age of the mothers participating in the study was found to be 30.61 ± 6.50. It was found that 40.6% of the mothers (n=130) had a high school diploma or higher, 83.1% (n=266) were not employed, and 45.3% (n=145) had household incomes equal to their expenses; 65.9% (n=211) lived in a nuclear family structure, and 63.7% (n=204) lived in urban areas, and 52.5% (n=168) had three or more children. Additionally, while the majority of mothers (83.8%) had not received first aid training, 85.9% reported wanting to receive such training (Table 1).

When the history of previous burns in children was examined, it was determined that 42.2% of

**Table 2:** Characteristics Related to Previous Burn Incidents in Children's Mothers

| Characteristic                               | Answer                                 | N   | %    |
|----------------------------------------------|----------------------------------------|-----|------|
| History of previous burns in the child       | Yes                                    | 135 | 42.2 |
|                                              | No                                     | 185 | 57.8 |
| Gender of the child with the burn            | Girl                                   | 55  | 40.7 |
|                                              | Boy                                    | 80  | 59.3 |
| Age of the child with a previous burn injury | 0–3 years                              | 90  | 66.7 |
|                                              | 4–6 years                              | 30  | 22.2 |
|                                              | 7–12 years                             | 10  | 7.4  |
|                                              | 12 years and older                     | 5   | 3.7  |
| Cause of the previous burn*                  | Spilled hot water or liquid (scalding) | 81  | 58.7 |
|                                              | Contact with a hot object              | 39  | 28.3 |
|                                              | Steam                                  | 9   | 6.5  |
|                                              | Flame                                  | 4   | 2.9  |
|                                              | Electricity                            | 4   | 2.9  |
|                                              | Chemical                               | 1   | 0.7  |

\* Multiple responses were given.

the participants' children had sustained burns. It was found that 59.3% of the children with burns were boys and 40.7% were girls. It was determined that burn injuries were most common in the 0–3 age group (66.7%), followed by the 4–6 age group (22.2%). It is noteworthy that the incidence of burns decreased significantly in older age groups.

When burn causes were evaluated, the most common cause was scalding due to hot water or liquid spills (58.7%), followed by contact with a hot object (28.3%) and steam (6.5%). Less commonly, burns caused by fire (2.9%), electricity (2.9%), and chemicals (0.7%) were identified (Table 2).

In the study, 34.4% (n=110) scalding burns, 27.2% (n=87) contact burns, 28.1% (n=90) flame burns, 51.9% (n=166) electrical burns and 54.4% (n=174) chemical burns, taking to hospital without doing anything was the most common first aid practice (Table 3).

In the study, it was determined that mothers learned first aid practices from their close environment such as relatives, friends or neighbours (24.7%) and family elders (22.8%). It was determined that the majority of the mothers

(88.4%) did not find first aid knowledge sufficient in intervention to the burn area, 92.2% of these mothers wanted to learn more about first aid in burns and wanted to get this information from a first aid course (35.6%) or a health worker (33.2%) (Table 4).

It was observed that mothers with high school and higher education had a higher rate than other education levels in terms of considering their knowledge of intervention to the burned area sufficient ( $p<0.05$ ). In addition, it was observed that working mothers had a higher rate than non-working mothers in terms of considering their knowledge of first aid intervention to the burned area sufficient ( $p<0.05$ ; Table 5). In the study, it was observed that there was no difference between the educational level, employment status, family income, family type, place of residence, number of children and previous burns in their children and the desire to receive first aid training ( $p>0.05$ ). At the same time, it was found that there was no difference between the family income, family type, place of residence, number of children and previous burns in their children and finding first aid intervention knowledge sufficient ( $p>0.05$ ; Table 5).

**Table 3:** Information on Mothers' First Aid Practices According to Burn Types

| Variable                                        | Answer                                              | N=320 | %    |
|-------------------------------------------------|-----------------------------------------------------|-------|------|
| Which first aid treatment for scald burns?      | Holding under running water                         | 110   | 34.4 |
|                                                 | I'll apply burn cream                               | 66    | 20.6 |
|                                                 | I'll take you to the hospital without any treatment | 50    | 15.6 |
|                                                 | I apply ice                                         | 29    | 9.1  |
|                                                 | I'll spread yogurt                                  | 22    | 6.9  |
|                                                 | I apply raw potatoes                                | 10    | 3.1  |
|                                                 | I don't know                                        | 12    | 3.8  |
|                                                 | I clean and seal with antiseptic (alcohol, batikon) | 7     | 2.2  |
|                                                 | I put toothpaste on                                 | 6     | 1.9  |
|                                                 | I apply olive oil                                   | 4     | 1.2  |
|                                                 | I put tomato paste                                  | 4     | 1.2  |
|                                                 | Holding under running water                         | 87    | 27.2 |
| Which First Aid Treatment for Contact Burns?    | I'll take you to the hospital without any treatment | 63    | 19.7 |
|                                                 | I'll apply burn cream                               | 49    | 15.3 |
|                                                 | I apply ice and apply burn cream                    | 40    | 12.5 |
|                                                 | I'll spread yogurt                                  | 23    | 7.2  |
|                                                 | I apply raw potatoes                                | 15    | 4.7  |
|                                                 | I don't know                                        | 15    | 4.7  |
|                                                 | I clean and seal with antiseptic (alcohol, batikon) | 9     | 2.8  |
|                                                 | I put toothpaste on                                 | 8     | 2.4  |
|                                                 | I pour flour                                        | 4     | 1.3  |
|                                                 | I apply olive oil                                   | 4     | 1.3  |
|                                                 | I put tomato paste                                  | 3     | 0.9  |
|                                                 | I'll take you to the hospital without any treatment | 90    | 28.1 |
| Which First Aid Treatment for Flame Burns?      | Holding under running water                         | 80    | 25.1 |
|                                                 | I'll apply burn cream                               | 47    | 14.7 |
|                                                 | I apply ice                                         | 30    | 9.4  |
|                                                 | I apply raw potatoes                                | 22    | 6.9  |
|                                                 | I don't know                                        | 17    | 5.3  |
|                                                 | I clean and seal with antiseptic (alcohol, batikon) | 12    | 3.8  |
|                                                 | I'll spread yogurt                                  | 11    | 3.4  |
|                                                 | I put toothpaste on                                 | 5     | 1.5  |
|                                                 | I put tomato paste                                  | 3     | 0.9  |
|                                                 | I peel the skin                                     | 3     | 0.9  |
|                                                 | I'll take you to the hospital without any treatment | 166   | 51.9 |
|                                                 | I put it in contact with the soil                   | 126   | 39.4 |
| Which First Aid Treatment for Electrical Burns? | I apply cold                                        | 15    | 4.7  |
|                                                 | I wait for it to heal without intervention          | 11    | 3.4  |
|                                                 | Applying burn cream                                 | 2     | 0.6  |
|                                                 | I'll take you to the hospital without any treatment | 174   | 54.4 |
|                                                 | Washing with plenty of water                        | 92    | 28.8 |
|                                                 | I wash with soap                                    | 25    | 7.8  |
| Which First Aid Treatment for Chemical Burns?   | I wait for it to heal without intervention          | 10    | 3.1  |
|                                                 | Cold application                                    | 10    | 3.1  |
|                                                 | Applying burn cream                                 | 9     | 2.8  |

**Table 4:** Mothers' Knowledge of Burn Treatment and First Aid

| Variable                                                                  | Answer                                                              | N   | %    |
|---------------------------------------------------------------------------|---------------------------------------------------------------------|-----|------|
| Where did you learn the first aid techniques you use for burns?           | From my immediate circle, such as relatives, friends, and neighbors | 79  | 24.7 |
|                                                                           | Elders in the family                                                | 73  | 22.8 |
|                                                                           | First aid course                                                    | 41  | 12.8 |
|                                                                           | Healthcare professional                                             | 41  | 12.8 |
|                                                                           | Social media                                                        | 36  | 11.3 |
|                                                                           | I don't remember                                                    | 24  | 7.5  |
|                                                                           | TV commercial                                                       | 12  | 3.8  |
|                                                                           | Website/Brochures/Posters                                           | 8   | 2.5  |
|                                                                           | During a hospital visit                                             | 5   | 1.8  |
|                                                                           | Yes                                                                 | 37  | 11.6 |
| Do you think your first aid knowledge is sufficient when treating a burn? | No                                                                  | 283 | 88.4 |
|                                                                           | Yes                                                                 | 295 | 92.2 |
| Would you like to learn more about first aid for burns?                   | No                                                                  | 25  | 7.8  |
|                                                                           | First aid course                                                    | 105 | 35.6 |
|                                                                           | Healthcare professional                                             | 98  | 33.2 |
|                                                                           | Social media                                                        | 34  | 11.5 |
|                                                                           | TV ad                                                               | 18  | 6.1  |
| How would you like to receive more first aid information about burns?     | Website/Brochures/Posters                                           | 9   | 3.1  |
|                                                                           | Elderly family members                                              | 9   | 3.1  |
|                                                                           | From my close circle, such as relatives, friends, and neighbors     | 9   | 3.1  |
|                                                                           | I don't know                                                        | 7   | 2.3  |
|                                                                           | During a hospital visit                                             | 6   | 2.0  |

## Discussion

In this study, the knowledge and practices of mothers with children aged 0–6 regarding first aid for burns were evaluated, and the factors associated with this knowledge and these practices were examined. The findings showed that the vast majority of mothers had not previously received training in first aid for burns, considered their current level of knowledge to be insufficient, and expressed a desire to receive training on first aid for burns. Furthermore, it was determined that a significant proportion of children had previously suffered burn injuries, and that these injuries were

more common among boys, in the 0–3 age group, and in the form of scalds.

The study found that the vast majority of mothers had not received training in burn first aid and considered their knowledge levels to be insufficient. Similarly, studies conducted in various countries have reported that parents' knowledge levels regarding burn first aid are insufficient (7,21–23). Research conducted in Turkey also indicates that a significant portion of mothers experience a lack of knowledge regarding burn first aid and feel a need for training (13,14). However, it is noteworthy that the vast majority of mothers in our study expressed a desire to

**Table 5:** Comparison of Mothers' Demographic Variables with Their Willingness to Receive First Aid Training and Their Knowledge of How to Treat Burn Injuries

|                       | Would you like to take a first aid course? |             | Do You Have Sufficient Knowledge of First Aid for Burns? |             |
|-----------------------|--------------------------------------------|-------------|----------------------------------------------------------|-------------|
|                       | Yes<br>N (%)                               | No<br>N (%) | Yes<br>N (%)                                             | No<br>N (%) |
| Mother's Education    |                                            |             |                                                          |             |
| Illiterate            | 78 (84.8)                                  | 14 (15.2)   | 8 (8.7)                                                  | 84 (91.3)   |
| Elementary School     | 84 (85.7)                                  | 14 (14.3)   | 7 (7.1)                                                  | 91 (92.9)   |
| High School and Above | 113 (86.9)                                 | 17 (13.1)   | 22 (16.9)                                                | 108 (83.1)  |
| Total                 | 275 (85.9)                                 | 45 (14.1)   | 37 (11.6)                                                | 283 (88.4)  |
| Chi-square            | 0.210                                      |             | 6.265                                                    |             |
| df                    | 2                                          |             | 2                                                        |             |
| p                     | 0.900                                      |             | 0.044*                                                   |             |
| Mother's Employment   |                                            |             |                                                          |             |
| Employed              | 43 (79.6)                                  | 11 (20.4)   | 11 (20.4)                                                | 43 (79.6)   |
| Unemployed            | 232 (87.2)                                 | 34 (12.8)   | 26 (9.8)                                                 | 240 (90.2)  |
| Total                 | 275 (85.9)                                 | 45 (14.1)   | 37 (11.6)                                                | 283 (88.4)  |
| Chi-square            | 2.139                                      |             | 4.929                                                    |             |
| df                    | 1                                          |             | 1                                                        |             |
| p                     | 0.144                                      |             | 0.026*                                                   |             |
| Family Income         |                                            |             |                                                          |             |
| Less than expenses    | 125 (89.3)                                 | 15 (10.7)   | 12 (8.6)                                                 | 128 (91.4)  |
| Equal to expenses     | 120 (82.8)                                 | 25 (17.2)   | 19 (13.1)                                                | 126 (86.9)  |
| Greater than expenses | 30 (85.7)                                  | 5 (14.3)    | 6 (17.1)                                                 | 29 (82.9)   |
| Total                 | 275 (85.9)                                 | 45 (14.1)   | 37 (11.6)                                                | 283 (88.4)  |
| Chi-square            | 2.513                                      |             | 2.627                                                    |             |
| df                    | 2                                          |             | 2                                                        |             |
| p                     | 0.285                                      |             | 0.269                                                    |             |
| Family Type           |                                            |             |                                                          |             |
| Nuclear               | 184 (87.2)                                 | 27 (12.8)   | 24 (11.4)                                                | 187 (88.6)  |
| Extended              | 91 (83.5)                                  | 18 (16.5)   | 13 (11.9)                                                | 96 (88.1)   |
| Total                 | 275 (85.9)                                 | 45 (14.1)   | 37 (11.6)                                                | 283 (88.4)  |
| Chi-square            | 0.822                                      |             | 0.021                                                    |             |
| df                    | 1                                          |             | 1                                                        |             |
| p                     | 0.365                                      |             | 0.884                                                    |             |
| Place of Residence    |                                            |             |                                                          |             |
| Urban                 | 179 (87.7)                                 | 25 (12.3)   | 19 (9.3)                                                 | 185 (90.7)  |
| Rural                 | 96 (82.8)                                  | 20 (17.2)   | 18 (15.5)                                                | 98 (84.5)   |
| Total                 | 275 (85.9)                                 | 45 (14.1)   | 37 (11.6)                                                | 283 (88.4)  |
| Chi-square            | 1.522                                      |             | 2.783                                                    |             |
| df                    | 1                                          |             | 1                                                        |             |
| p                     | 0.217                                      |             | 0.095                                                    |             |
| Number of Children    |                                            |             |                                                          |             |
| 1                     | 53 (88.3)                                  | 7 (11.7)    | 5 (8.3)                                                  | 55 (91.7)   |
| 2                     | 78 (84.8)                                  | 14 (15.2)   | 13 (14.1)                                                | 79 (85.9)   |
| 3 or more             | 144 (85.7)                                 | 24 (14.3)   | 19 (11.3)                                                | 149 (88.7)  |

|                                  |            |           |           |            |
|----------------------------------|------------|-----------|-----------|------------|
| Total                            | 275 (85.9) | 45 (14.1) | 37 (11.6) | 283 (88.4) |
| Chi-square                       | 0.393      |           | 1.216     |            |
| df                               | 2          |           | 2         |            |
| p                                | 0.821      |           | 0.545     |            |
| Has the child had a burn before? |            |           |           |            |
| Yes                              | 116 (85.9) | 19 (14.1) | 20 (14.8) | 115 (85.2) |
| No                               | 159 (85.9) | 26 (14.1) | 17 (9.2)  | 168 (90.8) |
| Total                            | 275 (85.9) | 45 (14.1) | 37 (11.6) | 283 (88.4) |
| Chi-square                       | 0.000      |           | 2.416     |            |
| df                               | 1          |           |           |            |
| p                                | 0.996      |           | 0.120     |            |

\* $\chi^2$ : Chi-square test;  $p < 0.05$ : statistically significant

receive training. This indicates that mothers are aware of their knowledge gaps and are eager to access accurate information. From a public health perspective, this finding suggests that community-based education programs have the potential for high participation and acceptance.

Approximately half of the mothers participating in the study reported that their children had previously suffered a burn injury. It was determined that the majority of children with a history of burns were male, in the 0–3 age group, and had sustained scald burns. These results are consistent with previous studies examining the epidemiological characteristics of childhood burns (24–27). The higher prevalence of burns, particularly in the 0–3 age group, can be explained by children's increased tendency to explore their surroundings during this period, their underdeveloped ability to assess dangers, and their need for constant adult supervision. Additionally, children's frequent exposure to hot liquids in the kitchen and living areas contributes to the higher prevalence of scald burns in this age group. The higher incidence of burns among boys may be related to behavioral characteristics described in the literature, such as being more active and prone to risk-taking (28). These findings indicate that burn prevention programs should focus particularly on families with preschool-aged children.

In our study, scald burns accounted for the vast majority of burns observed in children. This result is consistent with national and international studies on childhood burns (2,3,29). Scald burns are most commonly caused by spills of hot water, tea, food, or other hot liquids. The presence of young children in the kitchen alongside their parents, coupled with their easy access to hot liquids, increases this risk. Therefore, providing

families with first aid training alone is insufficient; preventive education aimed at reducing risks in the home environment must also be planned.

The recommended basic first aid for burns is to hold the burned area under cold running water for at least 20 minutes as soon as possible (6,30). In our study, while the use of running water was the most frequently reported practice for scalds and contact burns, the rate of this practice was found to be quite low. This suggests that while some mothers are aware of the correct procedure, evidence-based recommendations have not yet become sufficiently widespread in the community. Systematic reviews conducted in recent years have shown that applying cold running water for 20 minutes can reduce burn depth, decrease the need for surgical intervention, and improve clinical outcomes (30,31). Therefore, promoting the widespread use of correct first aid practices can help reduce burn-related complications in children.

One of the study's notable findings is that a significant proportion of mothers resort to unscientific practices such as applying ice, yogurt, toothpaste, tomato paste, olive oil, and raw potatoes. Similar results have been reported in studies conducted in other countries (32–35). The persistence of such practices cannot be explained solely by a lack of knowledge. Our study found that mothers' first aid knowledge is primarily acquired from family elders, relatives, and their immediate social circle. This suggests that traditional practices are passed down from generation to generation and that cultural health beliefs influence behavior. The continuation of incorrect practices can lead to delays in providing appropriate first aid and result in more serious consequences of burn injuries (34). Therefore, educational programs must focus not only on

providing information but also on correcting misconceptions and fostering behavioral change.

Our study found that mothers most frequently acquired their knowledge of burn first aid from family members, relatives, neighbors, and friends. In contrast, mothers indicated that in the future, they would most likely turn to healthcare professionals and first aid courses for information. Similarly, previous studies have reported that parents primarily obtain their knowledge of burn first aid from informal sources (7,8,32). This situation can pave the way for misinformation to spread easily within the community and for traditional practices to persist. On the other hand, mothers' desire to receive training from healthcare professionals indicates that the healthcare system has a significant opportunity in this regard. In particular, family health centers, pediatric clinics, and public health centers can be considered suitable settings for providing burn first aid training to parents.

The study found that mothers with a high school education or higher were more likely to consider their burn first aid knowledge sufficient. Similarly, the literature reports that as educational level increases, parents' knowledge and awareness of burn first aid also increase (23,36–38). Educational level facilitates individuals' access to health information, enhances health literacy, and increases the likelihood of adopting evidence-based practices (39). However, the fact that even a significant proportion of mothers with high educational levels in our study assessed their knowledge levels as insufficient indicates that knowledge gaps regarding burn first aid are not limited to individuals with low educational levels. Therefore, it is important to design educational programs that encompass all parents.

Our study found that working mothers were more likely than non-working mothers to consider their burn first aid knowledge sufficient. This may be related to working mothers having a broader social network through which they can access health information, greater access to educational opportunities, and better access to health-related resources. Similar results have been reported in studies on child safety and first aid (40). However, it should not be forgotten that knowledge adequacy is a subjective assessment. The fact that individuals perceive themselves as knowledgeable does not always mean they possess accurate information. Therefore, it is recommended that future studies evaluate not only parents' perceived knowledge levels but also their objective knowledge levels.

It is noteworthy that the study found no significant difference between mothers' desire to receive training and their sociodemographic characteristics. This result indicates that the need for burn first aid training is not specific to a particular group and is felt similarly across different segments of society. Although childhood burns are among preventable injuries, incorrect first aid practices can increase the severity of the injury and lead to increased use of health care services (41). Therefore, it would be beneficial to plan burn first aid training not only for at-risk groups but for all parents of young children.

The study's findings reveal important implications for both clinical practice and public health. From a clinical perspective, proper first aid interventions administered in the first minutes following a burn injury can positively influence the healing process and reduce complications (6,30). However, our study found that a significant proportion of mothers were unaware of the recommended practices or resorted to incorrect methods. From a public health perspective, this situation highlights the need for community-based education programs. Public health nurses can contribute to reducing childhood burns by planning burn prevention and first aid training for parents at family health centers, during home visits, in preschool settings, and through community education programs.

One of the significant contributions of this study is that it simultaneously assessed not only mothers' knowledge levels regarding burn first aid but also their practices for different types of burns, their sources of information, their educational needs, and factors related to knowledge adequacy. The findings indicate that there are significant gaps in mothers' knowledge and practices regarding burn first aid, that incorrect traditional practices persist, and that there is a high need for education. However, the fact that the vast majority of mothers express a desire to receive education suggests that these gaps can be addressed through appropriate educational initiatives. The results provide current evidence for planning community-based education programs led by nurses and for developing strategies to prevent childhood burns.

**Conclusion and Recommendations:** This study demonstrated that mothers of children aged 0–6 years have important deficiencies in knowledge and practices related to burn first aid, despite their strong willingness to receive education. The findings indicate that evidence-based burn first aid recommendations are not consistently applied and

that potentially harmful traditional practices continue to be used. These results highlight the need for improving parental awareness and strengthening community-level burn prevention efforts.

The study also showed that childhood burns occur predominantly during the preschool years and are most commonly associated with scald injuries, emphasizing the importance of early preventive interventions within the home environment. Since parents are usually the first individuals to respond to a burn injury, improving their first aid competencies may contribute to reducing burn severity, preventing complications, and improving child health outcomes.

From a nursing perspective, the findings support the development of nurse-led educational interventions focusing on burn prevention and evidence-based first aid practices. Public health nurses, pediatric nurses, and primary healthcare professionals are in a unique position to provide anticipatory guidance, identify knowledge gaps, and promote safe caregiving practices through routine child health services.

At the community level, integrating burn prevention and first aid education into maternal-child health programs, primary healthcare services, and public awareness campaigns may help reduce the burden of childhood burns. Particular attention should be given to correcting common misconceptions and traditional practices that may delay appropriate treatment.

A major contribution of this study is that it provides a comprehensive assessment of mothers' burn first aid knowledge, practices, information sources, educational needs, and associated factors in a population of mothers with young children. The findings offer current evidence that can guide the planning of family-centered educational programs and community-based burn prevention strategies aimed at improving child safety and health outcomes.

**Limitations:** This study has several limitations that should be considered when interpreting the findings. First, the study was conducted in a single tertiary care hospital, which may limit the generalizability of the results to other settings and populations. Second, the data were based on self-reported responses of mothers, which may be subject to recall bias and social desirability bias. Third, although efforts were made to include all eligible participants during the study period, the study relied on a non-random sampling approach, which may introduce selection bias.

In addition, the data collection tool was developed by the researchers; although its content validity was supported through expert evaluation and pilot testing, it was not a standardized scale, and therefore its psychometric properties are limited. Finally, the cross-sectional design of the study prevents the establishment of causal relationships between variables.

## References

1. Toma A, Voicu D, Popazu C, Mihalache D, Duca O, Dănilă DM, et al. Severity and Clinical Outcomes of Pediatric Burns—A Comprehensive Analysis of Influencing Factors. *J Pers Med*. 2024; 14(8):788.
2. Dhopte A, Tiwari VK, Patel P, Bamel R. Epidemiology of pediatric burns and future prevention strategies-a study of 475 patients from a high-volume burn center in North India. *Burns Trauma*. 2017; 5:1.
3. Özlü Ö, Başaran A. Epidemiology and outcome of 1442 pediatric burn patients: A single-center experience. *Turkish Journal of Trauma and Emergency Surgery*. 2022; 28(1):57–61.
4. Puthumana JS, Ngaage LM, Borrelli MR, Rada EM, Caffrey J, Rasko Y. Risk factors for cooking-related burn injuries in children, WHO Global Burn Registry. *Bull World Health Organ*. 2021; 99(6):439–45.
5. Harish V, Tiwari N, Fisher OM, Li Z, Maitz PKM. First aid improves clinical outcomes in burn injuries: Evidence from a cohort study of 4918 patients. *Burns*. 2019; 45(2):433–9.
6. Holbert MD, Singer Y, Palmieri T, Rose J, Mackey K, Singh S, et al. Cool Running Water as a First Aid Treatment for Burn Injuries. *Annals of Emergency Medicine*. 2026; 87(1):90–102.
7. Alomar M, Rouqi FA, Eldali A. Knowledge, attitude, and belief regarding burn first aid among caregivers attending pediatric emergency medicine departments. *Burns*. 2016; 42(4):938–43.
8. Davies M, Maguire S, Okolie C, Watkins W, Kemp AM. How much do parents know about first aid for burns? *Burns*. 2013; 39(6):1083–90.
9. Bennett CV, Maguire S, Nuttall D, Lindberg DM, Moulton S, Bajaj L, et al. First aid for children's burns in the US and UK: An urgent call to establish and promote international standards. *Burns*. 2019; 45(2):440–9.
10. Fadeyibi IO, Ibrahim NA, Mustafa IA, Ugboro AO, Adejumo AO, Buari A. Practice of first aid in burn related injuries in a

- developing country. *Burns*. 2015; 41(6):1322–32.
11. Şen MA, Yakıt Ak E, Arslan Ü. Mothers' safety attitudes towards home accidents and their self-efficacy on first aid in 0–6 years old children. *BMC Public Health*. 2025; 25(1):3243.
  12. Çiçek B, Şahin H, Erkal S. 0-6 Yaş Çocuğu Olan Ebeveynlerin Ev Kazalarına Yönelik Güvenlik Önlemlerinin İncelenmesi: COVID-19 Salgın Dönemi Örneği. *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi*. 2022; 21(43):212–30.
  13. Çalışır Ö, Çalışkan Z. Çocuklarda Yanık Durumunda Annelerin Yaptıkları Geleneksel Uygulamalar. *JHS*. 2020; 29(2):2.
  14. Gürler H, Yıldız İ. Yanık Tedavisi Gören Çocukların Annelerinin Uyguladığı İlk Yardım Müdahalesi ve Bilgisi. *Güncel Pediatri*. 2019; 17(2):2.
  15. Şentepe T, Kahriman İ. Acil Servise Başvuran ve 1-6 Yaş Grubu Çocuğu Olan Annelerin Ev Kazalarına Yönelik Güvenlik Önlemlerinin Bazı Değişkenler Açısından İncelenmesi. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi*. 2022; 11(3):1211–20.
  16. Wang S, Li D, Shen C, Chai J, Zhu H, Lin Y, et al. Epidemiology of burns in pediatric patients of Beijing City. *BMC Pediatrics*. 2016; 16(1):166.
  17. Çetintaş İ, Akgün Kostak M, Cumur E. The safety measures against home accidents of mothers of 0-6 age group children and related factors. *Journal of education and research in nursing (Online)*. 2022; 19(4):429–36.
  18. Yıldırım N, Kublay G. 1-4 Yaş çocuklarına yönelik ev kazalarını önleme programının etkinliği. *Hacettepe üniversitesi hemşirelik fakültesi dergisi*. 2016; 3(2):1–13.
  19. Allender J, Rector C, Rector C, Warner K. *Community & public health nursing: Promoting the public's health*. lippincott williams & wilkins; 2013.
  20. Yılmaz E. Yara ve yanık durumunda yapılan ilk yardım ve geleneksel uygulamaların belirlenmesi: Karabük örneği [masterThesis] [İnternet]. *Sağlık Bilimleri Enstitüsü*; 2020.
  21. Atique H, Atique H, Shamoos S, Azeem HF, Hussain SR. Knowledge of First Aid Treatment of Burns: A Comparative Study of Parents and Non-parent Adults. *Eplasty*. 2023; 23:e31.
  22. Hind Al Shikh RN, Salam Bani Hani RN, Hanan Abu-Musameh RN. Knowledge, Attitudes, and Practices Concerning Burn First Aid among Parents in Jordan: A Cross-sectional Study. *Jordan Journal of Nursing Research*. 2025; 4(2).
  23. Mohamad RMA, Refai HMA, Alotaibi AM, Alaleimi WS, Althaidi JN, Almesned FA, et al. Knowledge, attitudes, and beliefs regarding burn first aid among parents in Saudi Arabia. *International Journal of Medicine in Developing Countries*. 2023; 7(3):516–516.
  24. Arslan H, Kul B, Derebaşınlioğlu H, Çetinkale O. Epidemiology of pediatric burn injuries in Istanbul, Turkey. *Ulus Travma Acil Cerrahi Derg*. 2013; 19(2):123–6.
  25. Lal ST, Bhatti DJ. Burn injury in infants and toddlers: risk factors, circumstances, and prevention. *Indian Journal of Burns*. 2017; 25(1):72–5.
  26. Mobayen M, Zarei R, Masoumi S, Shahrousvand M, Mazloun SMH, Ghaedchukamei Z, et al. Epidemiology of childhood burn: a 5-year retrospective study in the referral burn center of Northern Iran. 2021; 6(3):101- 108.
  27. Nassar JY, Al Qurashi AA, Albalawi IA, Nukaly HY, Halawani IR, Abumelha AF, et al. Pediatric Burns: A Systematic Review and Meta-Analysis on Epidemiology, Gender Distribution, Risk Factors, Management, and Outcomes in Emergency Departments. *Cureus*. 2023; 15(11):e49012.
  28. Santiso L, Tapking C, Lee JO, Zapata-Sirvent R, Pittelli CA, Suman OE. The epidemiology of burns in children in Guatemala: a single center report. *Journal of burn care & research*. 2020; 41(2):248–53.
  29. Keshavarzi A, Parvar SY, Goodarzi M, Maaroufi A, Goodarzi Mr, Motazedian GR, et al. Burn Injuries in Primary School Children: A Multicenter Epidemiological Study Between 2009 and 2023. *Health Science Reports*. 2025; 8(4):e70674.
  30. Griffin B, Cabilan CJ, Ayoub B, Xu HG, Palmieri T, Kimble R, et al. The effect of 20 minutes of cool running water first aid within three hours of thermal burn injury on patient outcomes: A systematic review and meta-analysis. *Australasian emergency care*. 2022; 25(4):367–76.
  31. Singer YM. 284 Effect of <20-minutes of Cool Running Water < 3hours on Burn Patient Outcomes: A Systematic Review. *J Burn Care Res*. 2023; 44(Suppl 2):S181.
  32. Chirongoma F, Chengetanai S, Tadyanemhandu C. First aid practices, beliefs, and sources of information among caregivers regarding paediatric burn injuries in Harare, Zimbabwe: A cross-sectional study. *Malawi Med J*. 2017; 29(2):151–4.
  33. Kattan AE, AlShomer F, Alhujayri AK, Addar A, Algerian A. Current knowledge of burn injury first aid practices and applied traditional

- remedies: a nationwide survey. *Burns Trauma*. 2016; 4:37.
34. Solak M. First aid practices about wounds and burns in rural areas: an example from western Turkey. *BMC Res Notes*. 2025; 18(1):442.
  35. Wahyuningtyas ES, Handayani E, Wijayatri R, Wardani S. An Observational Study of Knowledge of First Aid for Burns among Parents in Indonesia. *J Burn Care Res*. 2023; 44(6):1502–8.
  36. Bassam SEA. Evaluate Maternal Knowledge and Attitude Regarding First Aid Among their Children in Buraidah City, Saudi Arabia Kingdom (KSA). *Med Arch*. 2022; 76(3):164–9.
  37. Gete BC, Mitiku TD, Wudineh BA, Endeshaw AS. Knowledge, attitude, and practice towards burn first aid and its associated factors among caregivers attending burn units in Addis Ababa, Ethiopia. A cross-sectional study. *Ann Med Surg (Lond)*. 2022; 81:104402.
  38. Papachristodoulou V, Tripsianis G, Constantinidis TC, Kakagia DD. Knowledge and attitudes in first aid practices for thermal burns: a cross-sectional study among adults in northern Greece. *Materia socio-medica*. 2023; 35(3):228.
  39. Estrela M, Leitão C, Neto V, Martins B, Santos J, Branquinho A, et al. Educational interventions for the adoption of healthy lifestyles and improvement of health literacy: a systematic review. *Public Health*. 2025; 245:105788.
  40. Aslan S, Yıldırım M, Tunçdemir A, Geçkil E. 0-6 Yaş Çocuğu Olan Annelerin Ev Kazalarına Yönelik İlk Yardım Hakkındaki Bilgi Düzeylerinin Belirlenmesi. *ADYÜ Sağlık Bilimleri Derg*. 2015; 1(2):2.
  41. Atique H, Atique H, Shamoos S, Azeem HF, Hussain SR. Knowledge of First Aid Treatment of Burns: A Comparative Study of Parents and Non-parent Adults. *Eplasty*. 2023; 23:e31.